CHAPTER 6

SMOKING PREVENTION, CESSATION, AND ADVOCACY ACTIVITIES

CONTENTS

INTRODUCTION

The tobacco control movement in the United States has involved the efforts of many diverse groups. Voluntary health agencies, State and local health departments, the Federal Government, medical organizations, private industry, and grassroots organizations have all contributed. This Chapter reviews the nonpolicy activities of these groups in the areas of smoking prevention and cessation, and advocacy over the past 25 years. It will not provide a complete review of the efficacy of different prevention and cessation methods; this has been done by others (e.g., Lichtenstein and Brown 1980; Pechacek 1979; Schwartz 1969, 1987; Schwartz and Rider 1978; Flay 1985a,b; Best et al. 1988; Biglan and Ary 1985; McCaul and Glasgow 1985; Snow, Gilchrist, and Schinke 1985; US DHEW 1979b; US DHHS 1986a). A selective review of the broader trends in these activities will provide a basis for understanding the current status of the smoking control movement and its possible future directions. A review of advocacy activities intended to lead to changes in smoking control policies over the last 25 years will serve as a bridge between this Chapter and Chapter 7, Smoking Control Policies.

The smoking prevention and cessation activities discussed in this Chapter were designed as direct antismoking messages incorporating advice and instruction on how to remain or become a nonsmoker. Smoking prevention programs include school curricula, both those specific to smoking and those integrated within a multicomponent health education approach; media-based efforts; and an array of other materials, events, and campaigns. Smoking cessation programs include a broad variety of activities ranging from self-help cessation materials to special smoking groups to the use of medication. The programs occur in various channels in the community including worksites, physician offices, hospitals, schools, and media.

Integrating Educational and Behavioral Interventions With Policy Initiatives

The integration of educational and behavioral programs with policy initiatives, including those that affect the price of cigarettes, the information printed on the packaging, the manner in which cigarettes can be advertised, the conditions of their sale, and the circumstances under which they may be smoked, has been one of the most important recent trends in smoking prevention, as well as in cessation-oriented interventions. Projects such as “Tobacco-Free America Project” (Bailey 1987) work on both fronts, advocating nonsmoking policies in schools along with providing more traditional smoking prevention materials and programs to reduce the number of new smokers. Advocacy activities and lobbying leading to policy changes were almost nonexistent at the time of the 1964 Surgeon General’s Report, but became progressively more evident during the 1970s and expanded significantly during the 1980s setting the stage for many of the changes in prevention and cessation policies and activities.

Even when explicit policy components are lacking in prevention or cessation programs, the content and impact of these programs should be considered in the context of the social and policy climate prevailing at the time of their design and implementation (see Best et al. 1988; Chassin, Presson, Sherman 1985; Chassin et al. 1987; Perry and Murray 1982). For example, the effects of a prevention or cessation activity might

be moderated by whether it was conducted during the era of television cigarette commercials alone (pre-1967), the era of both commercials and antismoking public service announcements (PSAs) mandated by the Government (1967-70) (see Chapter 7), or during the subsequent era of no televised cigarette commercials and the end of the mandated PSAs (post-1970). Other potentially relevant policy contexts include school regulation of student smoking and the level of public debate and restrictions on smoking in other settings at the time of the smoking prevention or cessation program. Both the smoking prevention and cessation programs and the public policy context remain in a continuous process of evolution and interaction.

PART I. SMOKING PREVENTION ACTIVITIES

Overview of Major Approaches to Smoking Prevention

In the years since the release of the first Surgeon General's Report (US PHS 1964), both the basic design of prevention efforts and their designated targets have changed. Generally, there has been a shift in the target group from high school and college students (US PHS 1964) to middle school and junior high school students, and a shift away from information-oriented antismoking education to psychosocial curricula designed not only to address youth's motivations to smoke but also to impart skills for resisting influences to smoke (Botvin, Eng, Williams 1980; Flay 1985a; McAlister, Perry, Maccoby 1979).

The changes in focus and design and the proliferation of prevention programs since the early 1960s have resulted in such a variety of approaches that they are now rarely considered together in reviews of smoking prevention programs. These differing approaches include (1) media-based prevention programs and resources, (2) smoking prevention as a component of multicomponent school health education curricula, and (3) smoking prevention through the psychosocial approaches of social influence and generic life skills curricula. Other smoking prevention resources and activities such as physician presentations to school assemblies, brochures, community campaigns, and educational resources have been sponsored by voluntary, professional, and community groups.

While the prevention approaches overlap considerably, both in form and content, this differentiation of program types can serve as a framework for tracing the prevention initiatives and directions taken by various organizations, as well as for highlighting the evolution of smoking prevention programs over the years. The following outline of the major prevention approaches will be expanded upon in a later section.

Media-based messages and campaigns were part of the earliest smoking prevention activities. The National Clearinghouse for Smoking and Health (later reorganized as the Office on Smoking and Health (OSH)) and the voluntary health organizations were among the early and continuing sponsors of newspaper and broadcast antismoking campaigns. These smoking prevention campaigns have continued with varying intensity over the decades, continuing into the present era of controlled research in the development and evaluation of media-based smoking prevention programs (e.g., Bauman et

al. 1988; Flay et al. 1988; NCI 1986a; Ramirez and McAlister 1988; Sussman et al. 1986; Worden et al. 1988).

The integration of smoking prevention curricula into comprehensive and multicomponent school health education curricula was one response to the findings of limited impact from early smoking-specific prevention efforts (see Davis 1977). The development of psychosocial approaches including social-influence and life skills programs in the 1970s was another response to the limited impact of early prevention efforts (Evans 1976; US DHEW 1979b). The integration of smoking prevention into general health education represented an important shift in the vehicle for antismoking messages, and the psychosocial approaches were based on a fundamental revision of the model underlying prevention strategies for smoking by youth.

The psychosocial approaches deviated from traditional antismoking education models by deemphasizing communication of the long-term health risks of smoking. Instead, these new curricula focused on young people's susceptibility to social pressures to smoke--influences inferred from consistent findings relating smoking by youth to smoking by their parents, siblings, and peers (Flay et al. 1983; US DHEW 1979c; US PHS 1964). In their various forms, social influence and life skills curricula have been designed to raise young people's awareness of the influences to smoke; to highlight the more immediate, and especially socially based, negative effects of smoking; and to "inoculate" youth against the effects of continued pressure and examples of others who smoke. The new approaches were bolstered by the literature on communication theory and on the psychosocial development of adolescents (US DHEW 1979b).

This Section covers the course of smoking prevention activities over the past 25 years. The first part presents a model of developmental stages of smoking acquisition as a framework for describing trends and options for prevention programs. This is followed by further description of the three major categories of current prevention programs and of cessation programs for youth. The next part describes in more detail the history of prevention activities of the major national voluntary health agencies, Federal support with emphasis on their early responses in the campaign to prevent smoking, and the activities of State and other organizations and agencies with emphasis on their recent activities. Considered next are problems in program dissemination and the gaps that frequently exist between the scientific literature and widespread program application in the field. Problems in program evaluation are reviewed in the next section. The review closes with a consideration of population factors such as changing attitudes toward smoking and secular trends in smoking prevalence as they relate to program diversification.

Prevention Opportunities Associated With Stages in the Acquisition of Smoking

As noted in the preceding chapter, several researchers (e.g., Flay et al. 1983; Leventhal and Cleary 1980) have proposed models of developmental stages in the acquisition of smoking. These models provide one dimension for describing and evaluating prevention opportunities and trends. The stages--for example, "preparation and anticipation," "initiation," "experimentation," "transition (becoming)," and "regular smoking" (Flay et al. 1983)--suggest a continuum of associated prevention oppor-

tunities. Spanning this developmental continuum are approaches to keep children from experimenting with tobacco, efforts to disrupt the evolution from experimentation to regular smoking, and early interventions aimed at influencing the young smoker to stop before the behavior and nicotine dependence become more firmly entrenched.

Stage models of smoking acquisition posit that different influences are at play at various ages; for instance, parents have a greater influence than peers in determining smoking intentions and behavior among young adolescents, while peers are more important for older adolescents. Social factors are viewed as more influential for beginning smokers, and physiological dependence and coping patterns as more important for the older, more established smokers (Flay et al. 1983; Leventhal and Cleary 1980; Chassin, Presson, Sherman 1985). (See Chapter 5, Part II.)

Prevention programs designed to reduce the number of young adolescents who initiate smoking reflect the dominant model for current smoking prevention. However, early antismoking education efforts addressed smoking by high school and college students (US PHS 1964), age groups encompassing several stages in smoking acquisition. The majority of current prevention programs focus on adolescents in grades 6 through 8, the age groups now at maximal risk for cigarette experimentation (Flay et al. 1983; Flay 1985a; Chapter 5). The shift of interest to smoking prevention programs aimed at younger adolescents is related to four considerations: (1) the findings of greater program impact among younger children (Jason, Mollica, Ferrone 1982; Johnson et al. 1986; Merki et al. 1968), (2) the general ineffectiveness of previous prevention approaches (Thompson 1978), (3) the recognition of secular trends toward earlier initiation of smoking (Evans et al. 1979; Flay et al. 1983; Chapter 5), and (4) the appeal of prevention versus the challenge of adult cessation (Evans et al. 1979).

A stage model of smoking acquisition and associated prevention opportunities suggests the potential for prevention programs aimed at even younger children in the preparation stage of smoking acquisition, the period during which early attitudes toward smoking are formed. The stage model also suggests cessation programs among older adolescents at the other end of the prevention continuum. Thus, some smoking prevention programs are directed at very young children in preschool or early elementary grades (ACS described in US DHHS 1986a; Peterson described in NCI 1986a; Pigg et al. 1985), and there are cessation programs directed at adolescents (e.g., ACS 1980, 1986; Weissmann et al. 1987). A call for continued development of programs addressing “pre-onset” issues and youth cessation was included in the National Cancer Institute (NCI) expert advisory panel’s recommendations (Glynn, in press). Youth smoking cessation approaches are described in a later section in this Chapter.

Prevention Program Approaches

As outlined above, the evolution of prevention programs since the 1960s can be classified into three major approaches: media-based programs, smoking prevention in the context of multicomponent school health education, and psychosocial curricula. The three major approaches will be more fully described in this Section. Other resources and activities in the field will be described in a subsequent section.

Media-Based Prevention Programs

Media-based prevention approaches have included antismoking messages delivered through newspapers and television and radio broadcasts. Most often these have taken the form of brief announcements, but more extended special programs and curricula have also been developed and distributed. The American Lung Association (ALA), American Heart Association (AHA), American Cancer Society (ACS), and National Heart, Lung, and Blood Institute (NHLBI) sponsored one such extended prevention program, first aired in November 1984, a 1-hr Public Broadcasting System special, "Breathing Easy," aimed at young people (Bailey 1985; US DHHS 1986a).

Mass-media-based messages and programs were included among the earliest smoking prevention efforts of the Federal agencies and voluntary health associations. Flay (1986 and 1987b) has provided comprehensive reviews of these and later media-based smoking control efforts.

Early evaluations of mass media in health promotion were not encouraging, leading to Flay's (1986) appraisal that mass media programs alone are not effective. Reviewing studies of media campaigns that were used either as the sole intervention or in conjunction with other material and programming, Flay concluded that the most effective use of mass media in substance abuse prevention lies in furthering the dissemination of other prevention resources, such as school-based programs. Parents, for example, may become more supportive of the efforts of school-based prevention programs brought to their attention through the mass media (Flay 1986). In reviews of mass media campaigns specifically focused on smoking, Flay (1987a,b) found some basis for optimism about their potential impact on adult smoking cessation. He recommended, however, further evaluation of mass media campaigns for the prevention of adolescent smoking; only 3 of the 56 evaluations reviewed included specific reference to smoking by children (Flay 1987b).

There have been several controlled studies of mass-media-based prevention programs in recent years (Bauman et al. 1988; Sussman et al. 1986; Flay et al. 1988; Worden et al. 1988; Ramirez and McAlister 1988). A University of Southern California study demonstrated that effects on student smoking correlated with amount of attention to the television segments and amount of discussion of the program with others (Sussman et al. 1986; Flay 1987b; Flay and Sobel 1983; Flay, Hansen et al. 1987). The program, which parents were encouraged to watch with their children, also had a cessation effect on the adults' smoking (Flay 1986).

Mass media interventions can also augment other prevention programs, generating prevention effects that occur more broadly, acting over time in the aggregate to affect the level of public awareness and the social acceptability of smoking. The potential for this level of public health impact is described by Leventhal and Cleary (1980) and Warner and Murt (1982) in their consideration of factors inhibiting the rise of smoking rates in the late 1960s and 1970s.

Even small program effects can have a large public health impact, given the very large audiences of mass media (Flay 1987b), making the actual distribution and broadcasting of these programs critical. Dissemination of media materials has been dependent on the good will and interest of publishers and broadcast managers, or on funds for

purchase of air time and print space. In recent years, video news releases (essentially press releases on videotape) have been used increasingly by private health organizations and Federal agencies (including the Office on Smoking and Health) to motivate television news coverage of tobacco-related "events" (Davis 1988a).

Smoking Prevention Programs in the Context of Multicomponent School Health Education Curricula

Smoking prevention components have long been incorporated in more general school health programs. This represents an alternative approach to programs focused exclusively on smoking prevention. The development and evaluation of the 8- to 10-week curriculum of "Growing Healthy" have involved a partnership between Federal agencies and national voluntary organizations spanning three decades, with ALA serving as a lead agency in these endeavors. "Growing Healthy" is the combined Primary Grades Health Curriculum Project aimed at students in kindergarten through grade 3, and the School Health Curriculum Project (SHCP) aimed at students in grades 4 through 7. Both are designed to integrate smoking and health into a comprehensive school health education curriculum. An evaluation of the original SHCP component between 1982 and 1985 demonstrated a delay in onset of smoking among the seventh grade students who had been in the program. Among the intervention students, 7.7 percent had started smoking by grade 7, compared with 12.7 percent among the control group (US DHHS 1986a).

The School Health Education Evaluation Project (Connell and Turner 1985; Connell, Turner, Mason 1985) also included a review of "Growing Healthy," as well as of three other school health programs with various dimensions of program implementation and impact. "Growing Healthy" has been validated by the Department of Education and included in the National Diffusion Network (NDN), an organization that includes data on the extent of diffusion of curricula that have been evaluated and validated by the Department of Education (US DHHS 1986a). As part of NDN, dissemination of "Growing Healthy" is facilitated and monitored.

The Teenage Health Teaching Modules, a comprehensive health education program for junior and senior high school students, were developed by the Centers for Disease Control (CDC) Center for Chronic Disease Prevention and Health Promotion through a contract with Education Development Center, Inc., and are also currently being evaluated (US DHHS 1986a). They are also now being promoted as part of ALA's "Growing Healthy" activities. The American Health Foundation "Know Your Body" program is a multicomponent school health education curriculum aimed at reducing smoking and risk factors for coronary heart disease. A recent study of program impact after 6 years of intervention found significantly lower rates of initiation of smoking among subjects in the intervention schools (Walter, Vaughan, Wynder 1988). Another study comparing the effectiveness of this program's smoking prevention component when offered alone or as part of the multicomponent package is currently under way.

Although many substance abuse prevention programs have adopted social influence and life skills training approaches (Bell and Battjes 1985; Polich et al. 1984), prevention of tobacco use is not consistently part of, let alone prominent in, the derivative

programs. One rationale for integrating tobacco use prevention with prevention programs for other forms of substance abuse is provided by the recently increasing appreciation of the common nature of licit and illicit drug addictions (US DHHS 1988).

In addition to comprehensive school health education curricula developed and evaluated by Federal agencies and national voluntary organizations, curriculum guidelines designed by individual school systems and commercial textbook writers sometimes include antismoking components. No systematic review of this category of smoking prevention programs in comprehensive health education curricula exists.

The degree of emphasis on and implementation of smoking-specific prevention curricula can be obscured within more general health education curricula. Evaluation of the impact of these programs on smoking behavior has been far less detailed than in smoking-specific curricula. In addition, the integration of tobacco prevention programs into a basic health education curricula presents substantive questions of program impact: Will the same basic prevention material be more effective if presented independently, as a special program? Will its impact be augmented or decreased by an ongoing context of basic health education? Drawing on the currently available research and on preliminary findings from ongoing studies, an expert advisory panel convened by NCI in December 1987 concluded that school-based smoking prevention conducted within a multicomponent health focus appeared as effective as programs with an exclusive emphasis on smoking, provided the smoking component received a minimum level of attention. One criterion for this minimum level of attention was five classroom sessions in each of 2 years (Glynn, in press). More focused evaluations of smoking prevention in the context of school health education are needed to answer these questions.

While a unified multicomponent health education curriculum may be attractive to schools faced with a multitude of health education requirements, this approach to smoking prevention depends on the state of health education at the State and national levels and faces all the obstacles and challenges experienced by such larger enterprises (Iverson and Kolbe 1983; Kolbe and Gilbert 1984; Kolbe and Iverson 1984; Lohrmann, Gold, Jubb 1987).

Psychosocial Curricula

Increased funding of smoking prevention research in the 1980s (Bell and Levy 1984; NCI 1984, 1986a; Stone 1985), as well as the advocacy of using psychosocial approaches developed for smoking prevention for other substance abuse prevention efforts (Bell and Battjes 1985; Polich et al. 1984), has brought psychosocial approaches to the forefront of attention. From a research perspective, they represent the dominant strategy in smoking prevention, the culmination of the preceding 25 years of investigation.

Reviewing the literature on the psychosocial prevention curricula, Bell and Battjes (1985) identified two main types of programs: (1) the social influence curricula that foster youths' awareness of and ability to resist peer and other social pressures and influences to smoke (Dielman et al. 1985; Flay et al. 1985; Hurd et al. 1980; Johnson et al. 1986; Killen 1985; Luepker et al. 1983; Perry, Killen, Telch et al. 1980; Shaffer,

Beck, Boothroyd 1983), and (2) those more broadly structured to also strengthen more general social skills and competencies underlying initial vulnerability to these pressures to smoke, referred to as life skills training approaches or generic life skills approaches (Botvin, Eng, Williams 1980; Botvin and Wills 1985; Gilchrist and Schinke 1985; Schinke et al. 1985). Both varieties include programs that have been originally designed or expanded to include substance abuse prevention of other kinds. Components of psychosocial approaches have also been integrated into the more general health education curricula. The social influence approach growing out of work by Evans and his colleagues (Evans 1976; Evans et al. 1981) shifted the smoking prevention agenda from issues in the development and dissemination of antismoking educational messages to questions about ways to affect the psychosocial processes underlying children's responses to social influences to smoke.

The social influence and generic life skills curricula for smoking prevention are the best documented and most thoroughly evaluated among the smoking prevention programs. The field has reached the point that some general statements can be made concerning components of programs and the general extent of their effect (e.g. Glynn, in press).

Common features of programs that have been found to have positive prevention effects include a focus on students in the middle and junior high grades; multiple sessions; intervention components designed to correct young people's misimpressions of the social significance and prevalence of smoking among peers; emphasis on the short-term reasons not to smoke (both physiological and social); education regarding the variety of social factors (parental, peer, and media) influencing smoking; practice with skills used to resist offers to smoke and examples of smoking; involvement of peers, either as peer leaders or as videotaped role models; and public commitment procedures (Flay 1985a,b). In addition, life skills training curricula are likely to include program components to enhance decisionmaking, self-esteem, and social competencies (Botvin and Wills 1985).

Three minimum program components were recommended by the 1987 NCI expert advisory panel: information about the social consequences and short-term physiological effects of tobacco use; information about social influences on tobacco use, especially peer, parent, and media influences; and training in refusal skills, including modeling and practice of resistance skills (Glynn, in press). The panel added the caveat that the quality of the delivery of these components would be critical to their success. Teacher training and adoption of existing smoking prevention programs, as designed, were recommended as two assurances of better quality program delivery.

Although use of peer leaders or models has been a frequent component of these programs, evaluations comparing the role of peer versus adult leaders have been mixed regarding the importance of peer leaders to program success (Arkin et al. 1981; Clarke et al. 1986; Murray et al. 1984; Perry, Killen, Slinkard et al. 1980; Perry et al. 1983). The logistic challenges entailed in implementing a peer-led program also must be considered. Arkin and colleagues (1981) found, for instance, that "Teachers, principals and students generally had more trouble adjusting to peer-led programs than to the health educator led programs" (p. 614). The recent NCI panel concluded that the most effective use of peer leaders was as assistants to a trained teacher, with responsiblity for car-

tying out specified program components (Glynn, in press). The findings of Perry and colleagues (1983) suggest that peer leaders may be most effective in delivering curricula focused on social pressures, as opposed to more traditional health effects curricula.

Within social influence and life skills curricula there has been a marked refinement of research methods and a better scientific and theoretical basis for program design and evaluation. Flay (1985a,b) described in detail the evolution of psychosocial smoking prevention programs and their evaluations, in which methodological progress has been made. This progress includes greater numbers of schools per condition, use of randomization, and greater emphasis on internal validity of programs. The use of procedures to validate reports of smoking status (Evans 1976) has also reflected the increasing methodological rigor of the psychosocial curricula research. Validated behavioral outcomes of prevention programs have progressively replaced earlier reliance on changes in measures of attitudes and intentions and on self-reported smoking, thus providing a firmer ground for comparison of program impact.

After more than one decade of this research, however, the findings are characterized as tentative and subject to further evidence. No single study unequivocally establishes the effectiveness of the psychosocial approaches, but reviewers, taking the sum of the research, see support for the potential of these programs. The social influence and life skills training approaches programs have been characterized as capable of a 50-percent reduction of smoking onset that has been shown to persist for up to 2 years (Flay 1985a; Botvin, Renick, Baker 1983). The promise of these programs is tempered by such factors as the complexity of the natural history of smoking acquisition (Cleary et al. 1988) and the continued need for long-term followup. (See subsequent sections for further discussion of these factors.)

Two other variations in smoking prevention programs also have been considered and, pending their further development, are best classified along with the social influence approaches. One is the parent-oriented approach to social influences, whereby parents and their communication skills and influences are the direct object of intervention (Worden et al. 1987; Oei and Fea 1987). Parental support and involvement in school-based smoking prevention programs, especially for pre- to grade 6 programs, is recommended in Glynn (in press). Worden and colleagues (1987) tested the smoking prevention effects of communication skills workshops for parents. While not presented to parents as a smoking prevention program, smoking was a focal topic and example throughout. Six months after the program was offered, significantly lower levels of self-reports of smoking among the fifth and sixth grade students in the communities that received high-intensity workshop coverage were demonstrated. Based on Oei and Fea's (1987) review of data and rationale from studies bearing on youth smoking and on parents as educators, they recommend further utilization of parents in smoking prevention programs with young children.

Another variation of smoking prevention programs using a cognitive development approach also builds on a developmental perspective on smoking acquisition. However, it considers social influences as but one set of factors bearing on the initiation of smoking among the young. Understanding processes of addiction, mechanisms for controlling emotions, and the relationship between smoking-induced sensations and

health threats is also seen as bearing on smoking by youth (Glynn, Leventhal, Hirschman 1985). A prevention program based on this model has been developed for students in the early stages of contemplating *and* experimenting with smoking. This cognitive development program significantly deviates from the social influence curricula in its inclusion of both young nonsmokers and smokers and in its examination of nonsocial influences on their experience of smoking. However, the age groups targeted are the same, social influences are also part of the curricula, and, more fundamentally, the program shares with the social influence curricula a theory-based approach to directly intervening in the processes and needs thought to underlie the development of smoking among young people. An 18-month followup of program and control students in grades 6 through 8 revealed significant differences in attitudes toward smoking and in students' self-reports of smoking (Glynn, Leventhal, Hirschman 1985).

Youth Smoking Cessation Programs

Youth smoking cessation programs are properly viewed as part of smoking prevention efforts to the extent that their ultimate goal is the prevention of the establishment of dependent, regular smoking. The limited research in this area cannot yet suggest the optimal balance of traditional "prevention" and cessation strategies for programs targeting young smokers. Some young smokers may exhibit much variability in their smoking; others show a pattern of consumption very closely resembling older, addicted smokers. (See Chapter 5.)

Recent interest in teenage cessation has been heightened by increasing social disapproval of smoking and acceptance of its restriction on the part of adolescents and society more broadly (Johnston, O'Malley, Bachman 1987; US DHHS 1986b), as well as voluntary health association and public health agency commitments to promoting nonsmoking environments in the schools (National School Boards Association 1987; US DHHS 1986a).

Data on naturally occurring rates of quit attempts and cessation among young smokers support interest in teenage cessation. These rates range from 18 to over 50 percent cessation with varying followup periods and suggest considerable flux in the natural history of smoking, as well as opportunities for intervention with young smokers after they begin experimenting with cigarettes (Alexander et al. 1983; Chassin, Presson, Sherman 1984; Ershleret al., in press; Hansen 1983; Hansen et al. 1985; O'Rourke, Nolte, Smith 1985; Skinner et al. 1985; US DHHS 1982).

Many of the early antismoking education programs incorporated cessation functions by virtue of their inclusion of older youth. Description of these early teenage smoking cessation programs, including those among the prototypes of antismoking education for youth, is included in the 1979 Surgeon General's Report (US DHEW 1979b) and in Seffrin and Bailey (1985). Smoking cessation programs specifically for youth have been developed by researchers (Weissman et al. 1987; St. Pierre, Shute, Jaycox 1983), voluntary associations (ACS 1980, 1986; Bennett, Austin, Janizewski 1986), and school personnel (Hulbert 1978). Program effects on cessation rates among young smokers have also been examined in studies that emphasize prevention of initiation (Best et al. 1984; Botvin, Renick, Baker 1983; Johnson et al. 1986; Perry, Killen, Telch

et al. 1980). Cessation programs addressing young people's use of smokeless tobacco have also been designed (e.g., Glover 1986; Severson et al. 1987). NCI is currently funding research on both prevention and cessation interventions for smokeless tobacco use, though no outcomes have been reported as yet (NIH 1986).

Teenage cessation programs have met with mixed success, in terms of both recruitment and retention of program participants, and of program impact. Study of teenage cessation programs has also generally suffered from very small numbers of participants (in part, a reflection of difficulty in recruitment) and from a dearth of formal outcome evaluations. Subject characteristics, including baseline smoking levels, vary greatly from study to study, as do length of followup periods and outcome criteria considered. Although these limitations to the research are substantial and restrict conclusions that can be made concerning the efficacy of teen smoking cessation programs, the emergence of new demands for and research on such programs warrants the following review in comparatively more detail than for other larger and more controlled smoking prevention studies.

St. Pierre, Shute, and Jaycox (1983) found reductions in self-reported rates of consumption among 10 of the 11 teen smokers who regularly participated in their program of peer-designed and peer-led "stop smoking" clinics. In evaluating AHA's "Save a Sweet Heart" program's no-smoking pledge day component, Bennett, Austin, and Janizewski (1986) found that the pledging was related to cessation at a 1-year posttest in their sample of 194 l0th-grade male smokers only, but not in the sample of 315 10th-grade female smokers. Overall, female students, including nonsmokers and smokers, were more apt than males to participate in the pledge component of the program.

Weissman and colleagues' teen cessation program (1987) used a contingency-based system of monetary rewards for reduction of expired carbon monoxide levels. The study suggested some promise among the males; four of the six male participants maintained abstinence during the 5-month followup period, with only limited "slips." However, all of the five females dropped out of the program before completion.

Perry, Killen, Telch, and colleagues (1980) compared the effects of a four-session program emphasizing the immediate physiological effects of smoking and the role of social influences with outcomes from a more traditional curriculum emphasizing the long-term health effects of smoking. Statistically significant differences in self-reports of smoking 5 months later were found within the treatment group of 498 10th-grade students, pre-and posttest for daily and monthly smoking; and between treatment and control (399 10th-grade students) groups posttest only for weekly and monthly smoking. Significant differences in corresponding measures of expired carbon monoxide were also found.

Taken in sum, there is some evidence that adolescent smoking cessation programs are efficacious, although the data and analyses are limited and difficult to interpret, and results are, therefore, far from conclusive. Further research and continued program development in this area are greatly needed.

History of Agency and Organizational Prevention Activities

Although the concept of disease prevention did not gain its widest currency and impact in antismoking efforts or in health promotion and medicine as a whole until the late 1970s (US DHEW 1979a), young smokers always have been an important focus of antismoking efforts. Prevention activities were under way during the 1950s and early 1960s even as the data on the health consequences of smoking were being reviewed by the scientific community (US DHEW 1979b). This Section on the history of prevention programs covers the national organizations' initial antismoking efforts and State departments' more current responses to the smoking problem, and the activities of a range of other organizations and agencies. The emphasis is on the major directions of their efforts, as opposed to comprehensive cataloging of all programs and initiatives.

National Voluntary Health Organizations

The three major national voluntary health organizations involved in the antismoking campaign, ACS, AHA, and ALA (previously called the National Tuberculosis Association and later the National Tuberculosis and Respiratory Diseases Association), developed their own curricular materials and resources for use in schools, as well as mass-distributed brochures, posters, films, and PSAs. In addition, they have funded smoking prevention research conducted by outside investigators (Bell and Levy 1984) and have contributed to the development of comprehensive school health education curricula that include smoking.

In the late 1960s in conjunction with CDC and other agencies, ALA began funding the development of the School Health Curriculum Project and the Primary Grades Health Curriculum Project, now jointly referred to as "Growing Healthy" (see description in earlier section). In addition to promoting the adoption of "Growing Healthy" in schools nationwide, ALA has developed smoking education modules and curriculum materials, and a variety of films and posters.

More recently, ALA developed the Biofeedback Smoking Education Project (BIOSEP) for students in grades 7 through 12, using student smokers and laboratory equipment, as a firsthand demonstration of the immediate negative physiological effects of smoking (Mitchell 1978; Young, Chen, Cernada 1982). Two studies have evaluated the effect of BIOSEP on the smoking behavior of adolescents, Mitchell (1978) and Young, Chen, and Cernada (1982). However, the outcomes from these two studies are not consistent and offer only modest support for BIOSEP's effects on smoking behavior.

An alternative approach for younger students aged 9 to 13 years is ALA's "Smoking Deserves a Smart Answer" (Bailey 1985). This kit uses a social influence approach centered on specific responses to direct peer pressure to smoke and includes humorous posters, stickers, a teacher resource guide, student worksheets, and sample role-playing situations.

Having issued a policy statement in 1963 to discourage smoking among both children and adults, AHA in 1967 developed sets of materials including a kit with a brochure for children to help their parents quit, a program that again may have had both cessa-

tion *and* prevention impact. Similarly, AHA's "Like Father, Like Son" campaign tapped both cessation and prevention themes.

AHA also has developed educational modules to prevent smoking among youth. Both the "Save a Sweet Heart" program and "Let's Talk About Smoking" are based on social influence approaches, the former involving parodies of cigarette advertisements and the use of a pledging procedure, the latter teaching skills to resist peer pressure to smoke (US DHHS 1986a). Brochures have also been aimed at smoking in the context of the family *(Children and Smoking: Message to Parents* (AHA 1987)).

In 1964, a National Conference on Cigarette Smoking and Youth was held under the auspices of ACS. Forty-four national organizations with a mission concerning young people participated. ACS developed numerous antismoking PSAs with prevention messages, including a 1967 television spot focused on the influence of parental smoking on children's acquisition of smoking. Other early campaigns used popular cartoon and children's story characters such as "The Three Little Pigs" to convey antismoking messages.

ACS has developed a series of health and smoking prevention programs for students in kindergarten through the intermediate grades. "An Early Start to Good Health," "ACS Health Network," "Healthy Decisions," and "Health Myself' are among the most widely disseminated ACS youth health education programs (US DHHS 1986a). The last of these programs, geared to students in the intermediate grades, emphasizes the role of societal influences on smoking. Referred to earlier in this Section, ACS has also developed teen cessation programs (ACS 1980, 1986).

In 1987, ACS, AHA, and ALA began a collaborative campaign for a "Tobacco-Free America." The project involves multiple goals and strategies, including smoke-free schools, mass media and advertising campaigns, a smoke-free class of 2000 promotion, and legislative initiatives (Bailey 1987). State-level coalitions of the three voluntary organizations also have developed programs of their own in support of this effort (US DHHS 1986a).

The prevention program efforts of the voluntary associations were fairly quick responses to the accumulating data on the health risks of smoking. Their materials have used several channels of potential influence on young people's smoking, primarily including family, media, and the school system. Compared with other prevention approaches, the family and parental influences have been emphasized--specifically, the influence of parental smoking on the initiation of smoking by children. Antismoking messages in the context of the family thus could have both prevention and cessation effects; parental nonsmoking was advocated as a powerful preventive influence. Wide distribution of materials was possible. The comprehensive school health education curricula were evaluated while the other programs incorporated only limited evaluation. The extent of actual utilization and impact of the specific distributed materials is not known.

National Interagency Council on Smoking and Health

The National Interagency Council on Smoking and Health, created shortly after the first Surgeon General's Report, fostered the early development of a variety of innova-

tive smoking prevention programs, many of which went on to receive continued major support from other Federal agencies. The "Youth Leadership in Smoking Controls Program," begun in 1976 with funds from CDC and renewed through 1979, was not intended as a study of adolescent smoking education programs per se. Rather, its primary goal was "to identify new approaches for involving youth in smoking control activities" (National Interagency Council on Smoking and Health 1979, p. 12.). Anticipating later prevention programs' orientation to the psychosocial factors affecting youth smoking, the program required that projects "show sensitivity to the needs, lifestyles and feelings of the 12--18-year-old adolescent," and involve youth in the design and delivery of the material (p. 12). Thirteen smoking prevention projects were supported through these contract funds, none receiving more than 10,000 dollars in any one award. Extent of program evaluation varied greatly. Projects resulting from this program were described in the program's final report (National Interagency Council on Smoking and Health 1979) and in *Cookbook for a Smokeless Diet*, a humorous manual written for teachers and community members (National Interagency Council on Smoking and Health 1977). (See next section for further discussion of the National Interagency Council.)

Federal Government Prevention Support

The late 1970s were a key time for Federal Government involvement in and funding of prevention programs. Until that time, federally funded research emphasized biomedical mechanisms of smoking-related disease, as opposed to research on smoking behavior and interventions to reduce its prevalence (Bell and Levy 1984). Secretary of Health, Education, and Welfare Joseph A. Califano's 1978 initiative to combat smoking led to appropriations for Federal agencies to support biobehavioral research into the factors affecting smoking and for the development of prevention and cessation programs (Bell and Levy 1984). Each of the Federal agencies developed initiatives for such research.

Depending on the agency, smoking was the sole behavior targeted or, in other cases, one of a set of behaviors the agency sought to prevent. For instance, the National Institute on Drug Abuse (NIDA) was concerned with substance use more broadly, NHLBI with cardiovascular risk factors. The agencies within the Department of Health and Human Services (successor to the Department of Health, Education, and Welfare (DHEW)) with initiatives most directly bearing on the prevention of tobacco use among children and adolescents included NCI, the National Institute for Child Health and Human Development (NICHD), NIDA, NHLBI, and CDC. In addition, OSH (Bell and Levy 1984) (OSH is now part of CDC) developed such initiatives. Federal health agency and OSH prevention initiatives included both research support leading to the development of prevention programs and the production of prevention resources and programs for direct use by schools and other organizations. In addition, guides of existing resources are periodically produced by Federal agencies, including *Smoking Programs for Youth* (US DHHS 1980a) and *Smokescreen: Guidelines for Helping Teenagers Become Nonsmokers* (American Institutes for Research 1980), contracted by CDC.

Office on Smoking and Health

The U.S. Public Health Service first officially became engaged in an appraisal of the available data on smoking and health in June 1956 when, under the direction of Surgeon General Leroy Burney, a scientific study group was established (Burney 1959). In 1957, the Public Health Service adopted the position that "excessive smoking is one of the causative factors in lung cancer" (Burney 1959). In 1964, DHEW became actively involved in efforts to discourage smoking.

The seminal smoking-and-health event in this evolution of Federal involvement was the 1964 release of the Surgeon General's Report on Smoking and Health. At that time, Surgeon General Luther Terry established an office within the Public Health Service Chronic Disease Control Program (US DHHS 1986a) to help collect, organize, and analyze information on smoking and health. This office later became the National Clearinghouse for Smoking and Health and still later (March 1978), OSH. (See Chapter 7.)

In the early years of the Clearinghouse, a number of innovative smoking control initiatives were supported, some of which are continued today by CDC, Center for Chronic Disease Prevention and Health Promotion (which now includes OSH), and by the Department of Education (US DHHS 1986a). Initially, the Clearinghouse developed curricula and teaching materials to educate young people about the hazards of tobacco use (US DHHS 1986a). Many of these materials are now being used in schools across the country. The Clearinghouse pioneered an effort to place PSAs in high school newspapers. It was also involved with mass distribution of pamphlets, program materials, and television PSAs. Between 1966 and 1971, the Clearinghouse conducted the first study of a communitywide smoking control intervention in San Diego County, CA (US DHEW 1976). This project involved interventions aimed at schoolchildren, health professionals, and adult smokers.

The San Diego project developed curriculum guides for students in grades 1 through 12, as well as newsletters to support the efforts of teachers and other health professionals involved in the project. A "Youth-to-Youth" program, precursor to peer-led programs, was also included. Although evaluation of the project was limited, the data collected suggested that the intervention had been successful. Survey results show significant reductions between 1966 and 1975 in the percentage of teenage and adult smokers in San Diego compared with national samples (US DHEW 1976). The programs of the San Diego Community Laboratory led to the development of other comprehensive health curriculum projects such as the School Health Curriculum Project.

Today, OSH continues its efforts for smoking prevention through the development and distribution of educational materials. It currently has a program of disseminating print PSAs through high school and college newspapers, as well as televised PSAs aimed at teenagers (US DHHS 1986a).

OSH has been the only Federal office devoted solely to the smoking issue. Now part of CDC, the Office continues to perform the same functions that were established for the Clearinghouse in the 1960s (US DHHS 1986a). OSH continues to serve as a repository for information on smoking and health and responds to thousands of public

inquiries for information each year. As part of its technical information service, it publishes a bimonthly bulletin of abstracts of published literature on smoking and health and periodically compiles a directory of ongoing research in smoking and health. OSH also periodically conducts surveys to estimate the prevalence of tobacco use among adults and adolescents and to determine the Nation's attitudes, knowledge, and beliefs concerning smoking, tobacco use, and their health effects. OSH continues to plan, coordinate, and produce public and professional information and education programs on smoking and health that are distributed either directly or through other institutions such as voluntary health organizations and State and local health departments. It is the responsibility of OSH to prepare and disseminate the annual Surgeon General's Report to Congress on the Health Consequences of Smoking, as required by Federal law (Public Law 91-222). Finally, OSH has new responsibilities under the Comprehensive Smoking Education Act of 1984 (Public Law 98-474) to collect information from the cigarette industry on cigarette additives, to transmit to Congress a biennial status report on smoking and health (US DHHS 1986a), and to provide staff support to the newly created Federal Interagency Committee on Smoking and Health (see Chapter 7).

National Cancer Institute

In the 1950s scientists working at the NCI were among those who helped identify cigarettes as a cause of illness and premature death (Burney 1959). In 1955, NCI, in cooperation with the U.S. Bureau of the Census, sponsored the first large-scale national survey of smoking patterns in the United States (Burney 1959). It was not until 1968, however, with the appointment of the Lung Cancer Task Force, that NCI established a formal research program to address the smoking issue. The Lung Cancer Task Force and a subcommittee of the Task Force, the Tobacco Working Group, established three objectives for the program: (1) production of a less hazardous cigarette, (2) identification of persons at increased risk of tobacco-related disease, and (3) development of pharmaceutical interventions to control smoking behavior. Development of a less hazardous cigarette was given a high priority until 1978, when this aspect of the program was abandoned.

Prior to 1977, NCI funded little research on behavioral interventions for smoking. A major shift occurred in 1980, when prevention was identified as an NCI priority (NCI 1984). In 1982, NCI reorganized its smoking research program, establishing the Smoking, Tobacco, and Cancer Program (STCP) within the Division of Cancer Control (Cullen 1986; Cullen, McKenna, Massey 1986; Glynn, in press). Included in STCP funding was research to prevent adolescent tobacco use. In fiscal year 1985, STCP funded 14 grants on adolescent tobacco use and its prevention, with budgets totaling over 5.5 million dollars for the year. The studies were designed to include approximately 170,000 students in grades 6 through 12 (NCI 1984, 1986a). Twenty-three adolescent smoking intervention trials, involving approximately 1 million youth, were under way by early 1988 (Glynn, in press). In response to increased use of smokeless tobacco among young males in the 1970s and 1980s (US DHHS 1986c), NCI also took the lead in funding smokeless tobacco prevention programs. Seven of the 23 NCI-funded trials focus on the prevention of adolescent use of smokeless tobacco.

The prevention and control of smoking and other forms of tobacco use have become top priorities for cancer prevention within NCI (Fanning 1988). In 1987, 80 percent of the 37 million dollars spent on smoking research was allocated to studies of smoking behavior. Smoking research accounted for approximately 2.7 percent of NCI's total budget in 1987.

After funding intensive research for several years in the development and evaluation of smoking prevention programs, NCI has begun to emphasize the need for widespread dissemination of these and other smoking intervention programs (NCI 1986b) and has so far funded two new studies of the integration of tobacco education in the schools.

National Heart, Lung, and Blood Institute

NHLBI began funding smoking prevention efforts in 1974 through the Vermont Lung Center; NHLBI had received an expanded mandate (for research on the prevention of behavioral risk factors) legislated by the National Heart, Blood Vessel, Lung and Blood Act of 1972. Continuing through 1983, the Vermont Lung Center's activities included a smoking prevention program aimed at youth aged 10 to 15 years (Stone 1985).

During the mid-1970s NHLBI supported the paradigm-setting work of Evans and his colleagues in the development of socially and psychologically based prevention programs (Evans 1976; Evans et al. 1981), and the development of the peer-taught smoking and substance abuse prevention program of McAlister and colleagues (McAlister et al. 1980; Stone 1985). The majority of the smoking prevention programs sponsored by NHLBI in the years to follow were part of more comprehensive, and often communitywide, approaches to cardiovascular risk reduction. In the early 1980s NHLBI was sponsoring 15 school-based cardiovascular risk studies, 10 with explicit smoking prevention components--in all but 2 of the 10 studies, other risk factors such as nutrition and physical activity were also targeted (Stone 1985).

National Institute on Drug Abuse

In the mid-1970s, NIDA addressed the behavioral factors of cigarette smoking and the addictive properties of nicotine by supporting research and issuing a series of monographs on cigarette smoking by Jarvik and colleagues (1977) and Krasnegor (1979a,b). In addition to sponsoring research on nicotine dependence and treatment in their own right, NIDA has approached cigarette smoking as another form of substance abuse and as a possible "gateway drug" that could lead to the use of other substances (US DHHS 1986a). The new smoking prevention programs were used as a prototype for the prevention of other forms of substance abuse (Bell and Battjes 1985).

National Institute for Child Health and Human Development

NICHD began funding of research on smoking and health in the early seventies. During the mid-1970s this effort was intensified as part of a program initiated by Secretary of Health, Education, and Welfare Joseph A. Califano. At that time the Institute identified two primary research areas: (1) factors related to risk-taking behavior

by children and the initiation of smoking, and (2) the effect of maternal smoking on the developing fetus. Emphasis on these two areas continues to the present. NICHD is working with the American College of Obstetricians and Gynecologists to develop a smoking cessation program for pregnant women, to be used in private obstetricians' practices.

Office of Disease Prevention and Health Promotion

The Office of Disease Prevention and Health Promotion (ODPHP) coordinates all prevention activities in the Public Health Service. ODPHP has sponsored evaluation of school health curricula's effects on smoking behavior (US DHHS 1986a) and supported a national survey of 8th and 10th graders' health knowledge, attitudes, and practices, including their smoking behaviors (US DHHS, in press; see Chapter 5).

Surgeon General's Reports

The Surgeon General's Reports and the media coverage surrounding them are among the primary ways that the Federal Government informs the public about the health consequences of tobacco use. The themes, emphases, and detailed reviews of these reports reflect the knowledge and interests of a large group of scientists in the United States and abroad. (Chapter 1 provides a list of the major topics covered in each of the Surgeon General's Reports since 1964.)

While not including a description of or specific recommendations for prevention programs, a section entitled "Taking Up Smoking" was included in the 1964 Report's Chapter entitled "Psychosocial Aspects of Smoking." The changing relationship of the child's smoking to parental and peer smoking as the child grows older was noted in the 1964 Surgeon General's Report: "As children grow older, they themselves, as well as their relationship to the home, change. With approaching adulthood and its associated new social patterns, other influences supplant those of the parents" (US PHS 1964, p. 369). As a further indication of prevention programs' roots in a stage approach to smoking acquisition, the 1964 Report continued, "It is quite possible that parents' influence affects the age at which children start smoking much more than it affects the ultimate taking or not taking up of the habit" (p. 370). (See Chapter 5 regarding determinants of smoking behavior.)

Consideration of young people and smoking in the Surgeon General's Reports after 1964 was initially restricted to documenting the extent of health effects among young smokers. Then in the 1977-78 Report, under the heading "Implications for Action," it was concluded that "dissuading young nonsmokers from starting to smoke" would result in the "greatest long-term benefits" compared with modifying the content of cigarettes or getting adult smokers to quit (US DHEW 1978, pp. 48-49). As for specific prevention approaches, the Report concluded that "health education of the young" was one of several antismoking efforts affected by "lack of knowledge on smoking behavior . . .Although much is known about some of the principles contributing to effective health education of the young, these have not yet been incorporated into programmes, which

could provide convincing evidence of their ability to reduce smoking" (US DHEW 1978, p. 54).

The 1979 Surgeon General's Report was a watershed for smoking prevention, as well as other smoking issues. Two chapters were devoted exclusively to smoking among young people and its prevention, Chapter 17 ("Smoking in Children and Adolescents: Psychosocial Determinants and Prevention Strategies") and Chapter 20 ("Youth Education") (US DHEW 1979b). In merging considerations of psychosocial smoking determinants among youth with considerations of more traditionally phrased "educational" programs, the 1979 Report reflected a critical transition in the development of prevention approaches and in their treatment in the Surgeon General's Reports. The introduction to Chapter 17 began with "It is possible that prevention programs directed at children and adolescents have generally placed too much confidence in merely communicating knowledge about the dangers of smoking" (p. 17-5). The Chapter then reviewed the range of psychosocial influences on youths' decisions to smoke, and called for including developmental and social psychological theory in the conceptual basis of prevention programs.

Demographic and psychosocial correlates of smoking among adolescents and smoking prevention approaches, with special reference to young girls and gender differences, were reviewed in the 1980 Surgeon General's Report on the health consequences of smoking for women (US DHHS 1980b). The 1981 Report on the changing cigarette (US DHHS 1981) did not consider smoking prevention per se, but briefly reviewed data on preferences among young smokers for cigarettes with various tar and nicotine levels. The natural history and prevention of smoking among adolescents were considered again in the 1982 Report on cancer (US DHHS 1982). Consensus was reached in this Report: the newly developed prevention programs based on social psychological theory were capable of a 50-percent reduction in smoking onset. The 1982 Report also included data on smoking cessation among adolescents. Prevention programs were not considered in the 1983 Report on cardiovascular disease (US DHHS 1983a), the 1985 Report on cancer and chronic lung disease in the workplace (US DHHS 1985a), or, with the exception of its review of nonsmoking policies in the schools, in the 1986 Report on involuntary smoking (US DHHS 1986b). While several smoking prevention programs were reviewed in the 1984 Report's review of community studies of smoking control, it was noted that, for the most part, community studies focused on smoking cessation among adults, rather than on prevention (US DHHS 1984). Most recently, the 1988 Surgeon General's Report on nicotine addiction concluded that smoking prevention should be integrated into substance abuse prevention programs for youth (US DHHS 1988), though the specific program options available were not reviewed.

State Health Departments

State health department initiatives to curb tobacco use have increased in the past decade (US DHHS 1986d). Many State health departments have established smoking education programs (US DHHS 1986a). State departments of education and departments of health often serve as clearinghouses, compiling guides to existing prevention resources (e.g., University of the State of New York 1979). Several State health depart-

ments have organized special committees to develop comprehensive smoking control plans (Coye 1988; Minnesota Department of Health 1987; US DHHS 1986a), with most focusing on prevention rather than cessation. Several of these plans are cited in Chapter 7 (Table 20). Most notable among the plans is Minnesota's, which, in addition to a broad range of other prevention program and policy components, earmarks a portion of the State cigarette excise tax to support smoking control initiatives (Minnesota Department of Health 1987).

The 1986 inventory of State and local programs (US DHHS 1986d) described prevention programs operating through 20 State departments of health, State interagency coalitions on smoking and health, and State departments of education. These prevention initiatives include a variety of approaches: implementation of existing health curricula, the development of specific new resources and guidelines, teacher training programs, promotion of resource centers, and community and parent programs. In an additional nine States, county organizations, including departments of health and interagency coalitions, were listed as undertaking specific smoking prevention projects that were most often curriculum based.

Other Organizations and Agencies

Although tobacco control is not their central mission, other institutions, agencies, and medical societies integrate smoking prevention programs into materials for distribution through schools and other settings. The program materials include the March of Dimes' for (often) young, expectant mothers; National Institute on Alcohol Abuse and Alcoholism materials on substance abuse (US DHHS 1986a); and the American Dental Association materials on tobacco use, especially the use of smokeless tobacco and oral disease.

Through their professional organizations and as individuals, physicians and other health researchers have designed materials and presentations, primarily for school assemblies. The American Medical Association (AMA) (1987), the American Medical Women's Association, and Doctors Ought to Care (DOC) are among those organizations that have designed smoking prevention materials and currently promote their delivery through school assemblies. Volunteers for Health Awareness, a society of health researchers and health care providers in the Boston area, have delivered antismoking assemblies to junior high school students each year since 1969 (Reif 1976; US DHEW 1979b).

In collaboration with ALA and researchers at Lawrence Hall of Science at the University of California, Berkeley, the American Nonsmokers' Rights Foundation (formerly California Nonsmokers' Rights Foundation) has also developed smoking prevention curricula centered around a television documentary, "Death in the West" (Bailey 1985) and a film entitled "Second Hand Smoke" (American Nonsmokers' Rights Foundation 1986). Addiction and tobacco industry tactics are highlighted in the curricula (California Nonsmokers' Rights Foundation 1983). The foundation has also developed an adjunct peer-led program called "Teens as Teachers" to complement use of the films.

By 1979, it was estimated that there were thousands of smoking prevention activities independently undertaken by schools and community groups, programs largely neither

formally described nor evaluated (Evans et al. 1979; US DHEW 1979b). While there is increasing documentation of programs on the national and State level (US DHHS 1986a, 1986b), program development and implementation by schools and communities, as special events or as part of existing health education curricula, are far less likely to be systematically recorded and evaluated.

Problems in Dissemination of Smoking Prevention Programs

Evaluation of the development and progress of prevention programs must include both controlled, scientific examination of program efficacy and study of the factors characterizing actual and potential widespread use of programs and their public health impact. This represents a merger of perspectives only recently formally considered in the field of smoking prevention programs (NCI 1986b; Best et al. 1988; Cleary et al. 1988; Flay 1985b).

The current state of smoking prevention programs and resources reveals a gap between these two approaches. The research-driven smoking prevention curricula have most often been developed without a mechanism for widespread application and use. In turn, many of the materials likely to be used in the field by public health professionals, educators, and other policymakers responsible for young people's health have had limited evaluation, except for the comprehensive health education curricula, and the extent and process of their dissemination have generally not been systematically documented.

Once research-based programs are developed and initially found to have potential impact, there have not typically been mechanisms to encourage their active distribution to school systems and other organizations. Most at best can only respond to specific requests for information about their program or dissemination of their materials. Recognizing this research gap, NCI (1986b) has initiated research to determine the most effective method to integrate tobacco education programs that have been proven to be efficacious into school programs. It is encouraging research that is focused more on application and dissemination than on the development of new curricula and interventions.

Some of the issues bearing on program dissemination are reviewed in the smoking prevention literature (Best et al. 1988; Cleary et al. 1988); others are considered in broader literature on health education, program adoption, and the diffusion of innovation (Basch, Eveland, Portnoy 1986; Basch and Sliepcevich 1983; Murray 1986). Barriers specific to widespread institutionalization of smoking-specific programs within schools include demands on teacher time, cost of materials for specific programs and teacher training, and the variety of competing educational and health priorities found within a school system. (See also Kolbe and Gilbert (1984) for a discussion of obstacles to school implementation and maintenance of new health education programs.) Ideally, the likelihood of distribution and use of prevention programs in the field should be considered throughout the course of program design and evaluation and not restricted to end-stage discussions of the feasibility of disseminating already developed and evaluated programs.

The availability of funding to bolster dissemination of existing programs has varied over time. Federal funding for implementation and demonstration of health education programs was provided by the 1979 Health Education Risk Reduction Grant Program (Kolbe and Iverson 1984). Additional funds were appropriated in 1980 for grants to deter smoking and use of alcohol by adolescents. The reorganization of such categorical grant programs into a block grant structure in 1981 resulted in a shift of Federal funds to the State level. However, the reduction of total available funds and the restructuring of the funding mechanism created competition within States for these funds and eliminated smoking-specific demonstration grants. It also made for less secure support of health education in general (Kolbe and Iverson 1984). Although a variety of organizational, social, and political factors can affect the likelihood of adoption and use of a particular prevention program, the effect of availability of funds for teacher training, purchase of materials, and even the simplest of evaluations must be considered in any analysis of the history and prospects of prevention efforts.

Dissemination mechanisms also include providing information about programs. Federally funded databases and programs with potential for aiding the dissemination of smoking prevention programs are available. The Combined Health Information Database includes information on State and local programs listed in the National Status Report on Smoking and Health (US DHHS 1986a), as well as information on programs funded under the 1979-81 smoking and alcohol grant program (US DHHS 1986a).

The NDN of the National Institute on Education includes data on extent of diffusion of evaluated and validated curricula. While health education is not its primary focus, NDN does include five comprehensive health education and substance abuse prevention programs into which smoking prevention has been integrated, including "Growing Healthy" (NDN 1988b). Other promising programs, such as "Know Your Body," are currently under review. By providing information on the programs, awarding grants to further the dissemination of selected curricula, and maintaining annual records on program dissemination among participants (NDN 1988a), NDN functions both in the active dissemination of programs and in monitoring the extent of use of various curricula nationwide.

Complementing the need to get research-derived programs into the hands of schools and other organizations, continued program evaluation is needed once they are out in the field. These data are needed to address questions concerning the applicability of programs, the extent and quality of implementation, and their effectiveness once outside of controlled research settings. Additionally, through inquiry into factors affecting actual distribution and use of programs, these evaluations could also contribute to the development of guidelines supporting effective dissemination of smoking prevention programs.

In these evaluations of the dissemination process, statistics need to go beyond data such as number of sets of program materials distributed, to include surveys of actual use and degree of implementation as well as program impact. The evaluation of two ACS elementary school health education programs, for example, included data on teacher use of materials (Pigg et al. 1985). There was considerable variation in the percentage of teachers reported to have used materials in those schools that had kits available. The ACS "Usage Report Card," a record-keeping system for use by teachers to

document numbers of children exposed to the materials, was not always completed and mailed as requested, according to 75 percent of schools surveyed. Variability in extent of use and in documenting such use contributes to the difficulty of interpreting levels of implementation even when, in the case of this study, approximately 80,000 copies of the programs had been distributed to schools.

Best and colleagues (1988) have outlined research needs on the diffusion of smoking prevention programs--research the authors consider at least as vital as that evaluating effectiveness of program content. Diffusion studies, they conclude, should entail consideration of five sets of factors: planned diffusion strategies, program packaging, provider training, implementation monitoring, and costing (both cost of materials and cost-effectiveness of the program).

Problems in Evaluation of Smoking Prevention Programs

Prevention efforts within the psychosocial, more general health education, and media approaches have operated with very different goals, intended mechanisms for effect, and standards for evaluation. As reviewed above, the psychosocial influence smoking prevention curricula have been subjected to years of research development and evaluation (e.g., Best et al. 1988; Biglan and Ary 1985; Flay 1985b; McCaul and Glasgow 1985; Snow, Gilchrist, Schinke 1985). The literature contains much detail about their effects in university-administered research projects. However, far fewer data are available on the extent of their adoption and use by others in the field and on their impact when implemented in less-controlled settings (Best et al. 1988; Cleary et al. 1988). In most cases, active mechanisms for dissemination of the research products are lacking. These programs are most often not part of a system to ensure their dissemination once the typical 3- to 5-year development and evaluation phase of the research is complete. (See Prevention Section, Problems in Dissemination of Prevention Programs.)

Prevention programs based on PSAs, posters, brochures, and other curriculum resources sponsored by Federal agencies and professional and voluntary organizations have been widely distributed through the tremendous efforts of these agencies and organizations. However, their effectiveness has generally been less thoroughly evaluated than that of the psychosocial smoking prevention curricula. Reflecting the priority of using their limited resources for dissemination, the programs and their outcomes rarely receive a level of evaluation comparable to that found in the peer-reviewed research literature on smoking prevention.

Continuing methodological problems in prevention research include variations in criteria for measuring smoking outcomes in different studies, problems of attrition (Biglan et al. 1987; McAlister and Gordon 1986), limitation to white middle-class subjects (Gilchrist and Schinke 1985; Glynn in press), differences in level of analysis of effects and level of assignment to treatment or control group (Flay 1985a), and limited long-term followup.

Need for Long-Term Followup

The need for long-term perspectives and followup of the effects of smoking prevention programs has been noted in the 1979 Surgeon General's Report (US DHEW 1979b) and by Chassin and colleagues (1985), Evans (1984), and others. Prevention effects need to be maintained and monitored throughout the high school years to ensure that youth pass through this risk period without becoming smokers. Although long-term evaluation of prevention programs is frequently included in review article recommendations for future research (Biglan and Ary 1985; McAlister, Perry, Maccoby 1979), reports of 2-year or, less frequently, 3-year impact (for study subjects most often originally in junior high) constitute the most common long-term followups (Telch et al. 1982; Johnson et al. 1986; Chassin et al. 1985). A recent report by Flay, Thompson, and colleagues (1987) included results for a 6-year followup of students in the Waterloo Smoking Prevention trial. While prevention of onset of experimental smoking persisted through the end of grade 8, at the next assessment, during grade 12, no significant effect remained. Another NCI-funded smoking prevention project is currently tracing subjects through the important transition beyond high school (Murray, described in Glynn, in press).

There are data suggesting that *delay* in initiation can constitute a desirable prevention outcome: delayed onset has been found to be associated with decreased mortality (US DHHS 1986a) and increased likelihood of quit attempts and cessation during the school years (Ershler et al., in press). However, variations in age of onset considered in these studies were naturally occurring and not the result of a specific prevention program. Thus, it remains to be confirmed that program-induced delays in onset among contemporary youth have the same relationship to later smoking behavior and health outcomes as do the naturally occurring variations.

Construct Validity

Another major methodological challenge posed in the evaluation of prevention programs is the problem of construct validity (Flay 1985a; McCaul and Glasgow 1985). With even the most highly developed programs, given their use of a multiple component format, it has been difficult to determine the key elements responsible for a prevention effect. Best and colleagues (1984, 1988), among others, express the more general need to study the factors mediating program impact in order to understand what program components work for whom. Given the current gender differential in smoking prevalence among young people (Chapter 5), and the possibility of gender differences in effectiveness of intervention strategies, further attention should, for example, be given to gender differences relevant to prevention programs (Gilchrist, Schinke, Nurius, in press; Gritz, 1986).

The studies of Hops and colleagues (1986), Murray and associates (1984), Perry and colleagues (1983), and Botvin, Renick, and Baker (1983) are among efforts to pursue construct validity and develop data on the efficacy and necessity of the specific program components. Hops and colleagues (1986) focused on refusal skills training and assessment of program impact through audiotaped test situations (offers to smoke). While

this study of seventh grade students did not include a sufficient number of smokers to test for program impact in preventing smoking, analysis of student responses to the test situations found that students who received a smoking prevention program involving refusal skills training took less time to respond to the taped offer to smoke, and gave longer responses than did the control subjects, thus confirming several measures of behavioral impact of the program.

The studies of Murray and associates (1984) and Perry and colleagues (1983) compared program conditions varying instructors (adult or peer) and program content (long-term health consequences, social consequences, and immediate health effects). Murray and colleagues found the short-term-influences material, both social and physiological, to be most effective in preventing onset of smoking. Delivery of short-term-influence messages material by same-age peer leaders was more effective than by adult leaders. Perry and colleagues found a similar instructor by material interaction. In this study of 10th grade students, college-age peer leaders were more effective in delivering material on social pressures; adult classroom teachers were more effective with the traditional health effects curriculum. In this study, however, no differences were found overall between the effectiveness of the different curriculum programs. The curriculum emphasizing long-term health effects was as effective as those emphasizing more immediate social and physical effects.

In their study of the impact of characteristics of program delivery of the Life Skills Training material, Botvin, Renick and Baker (1983) found that an intensive "mini-course" format had comparable preventive effects at 1 year as the same material offered one classroom session per week. By the end of the second year, however, the more intensive format had greater impact on several measures of student smoking. The addition of "booster" sessions also added to the program's effectiveness.

Failure to Reach Dropouts and Other Youth at Higher Risk for Smoking

An intrinsic limitation of school-based prevention programs includes failure to reach truants and dropouts who are at higher risk for smoking (Flay, Thompson et al. 1987; Pirie, Murray, Luepker 1988). Numerous studies have suggested that those adolescents who skip classes and have lower grades and educational aspirations are more likely to smoke (Flay et al. 1983; Johnston, O'Malley, Bachman 1987). The recent studies by Pirie, Murray, and Luepker (1988) and Flay, Thompson, and coworkers (1987) confirmed that high school dropouts are more likely to be smokers. This limitation has implications both for the effectiveness of the intervention efforts and their evaluations. The need for more attention to high-risk youth, those young people apt to smoke and, more generally, to be involved in multiple risk behaviors (e.g., other forms of substance use, early sexual activity, and pregnancy) is particularly acute. Groups of youth who are at especially high risk of smoking are likely to receive more attention in new research (Glynn, in press), paralleling trends in the field of adult cessation, where interest has turned to heavy smokers who appeared to experience the most difficulty in smoking cessation (NCI 1984, 1986a). Gilchrist and Schinke (1985) have called attention to the need for broader strategies for high-risk youth. Sussman and colleagues (1987) have noted ethnic group differences in rates of smoking and in psychosocial predictors of

smoking among seventh and eighth grade students in southern California, differences bearing on the effectiveness of various prevention strategies. (See Chapter 5.)

Differences in likelihood of smoking among subgroups of youth led Best and colleagues (1988) to raise a question of strategy for young smokers: Should efforts be focused on groups at high smoking risk, or should prevention programs seeking full population coverage be continued? The need to address high-risk youth, and in particular those from blue-collar socioeconomic backgrounds, is apparent in the face of the continuing marked differences in the likelihood of smoking among youth who drop out of school (Pirie, Murray, Luepker 1988; Flay, Thompson, et al. 1987), those who stay in high school but without plans for further education, and those who go on for postsecondary education (Johnston, O'Malley, Bachman 1987). (See Chapter 5.) Marked occupational differences in smoking prevalence further reinforce socioeconomic differences in smoking when young people enter the workplace (US DHHS 1985a).

Population Factors Related to Diversification of Smoking Prevention Programs

The evidence so far does not support the hypothesis that a single program has been or can be developed to prevent adolescent smoking across the board. Rather, successful smoking prevention may result from the aggregate of multiple types of programs and avenues of delivery, thus supporting continued diversification of program approaches. (See Glynn, in press; Perry et al. 1983.) Consideration of secular trends of smoking attitudes and behavior as well as other characteristics of the population also supports the need for program change and diversification over time.

Shifts in the effectiveness of prevention or intervention strategies may reflect as much the target population and the historical era as the inherent quality of their design. As Green and Green (1977) stated, any health education effort, any diffusion of a new program or behavior must consist of a series of "time-dependent strategies." Approaches effective with the early cohorts--for instance, the approaches that showed promise in influencing the first cohorts of young people to avoid smoking--may not be effective with later cohorts or with the remainder of the first cohort that was not affected by the initial intervention. Flay (1987a,b), for example, with regard to media-based adult smoking cessation programs, suggested that there are differential potentials forprogram impact as the level of knowledge about the health risks of smoking changes. Best and associates (1988) and Chassin and others (1987) have also considered the changes in optimal prevention target populations that can occur with either differential prior program impact or changes in secular trends in knowledge and behavior.

The effectiveness of different prevention programs has also been influenced historically by the social and demographic shifts of age and gender in smoking among young people that occurred over the last 25 years (Chapter 5). The young smokers of the early 1960s started at more advanced ages than contemporary youth; smoking was more prevalent among males than females. In the mid-1970s through the 1980s, the rate of smoking by girls first matched and then exceeded the rapidly declining rate of smoking by boys. (See Chapter 5). Many schools used to grant students smoking privileges. Now schools have revoked or seem increasingly likely to revoke student smoking

privileges and to strengthen and enforce existing nonsmoking policies. Society, as a whole, is in a new period of increased disapproval and regulation of smoking (Chapters 4 and 7).

The relationship between these larger social trends in smoking behavior and attitudes and the impact of prevention programs on the prevalence of smoking by youth should also be considered. The increasing social disapproval of smoking by both adults and young people (Johnston, O'Malley, Bachman 1987) may reinforce prevention program effects. Prevention programs implemented during the time when smoking behavior was increasing among youth were swimming against the secular stream of increasing pressures and examples to smoke; later programs could, on the other hand, benefit from the growing attitudinal and behavioral momentum against smoking. Moskowitz (1983, p. 239) observed that "The current social climate regarding cigarette smoking may be essential to the success of recent programs in preventing cigarette smoking." In contrast, the generally unsuccessful smoking prevention programs of the 1950s, 1960s and early 1970s were conducted during a period of increasing acceptance of smoking by youth, the creation of new school-sanctioned smoking privileges, and rising rates of smoking by young females. The prevalence of smoking by American youth did not begin to decrease until the mid- to late 1970s, precisely the time that research on the more successful social influence curricula began (Evans 1976). The sharpest decrease in the smoking prevalence among youth occurred during the late 1970s.

As presented in Chapter 5, the rate of smoking among high school seniors failed to decline in the 1980s. Should this plateau of smoking prevalence by high school seniors persist, further shifts in prevention approaches may be needed. This could include changes in the content balance of program and policy approaches and in increased efforts to ensure wider dissemination of existing programs. More broadly, it highlights the need for continued adjustment of prevention strategies and the importance of diversified approaches upon which to draw.

PART II. SMOKING EDUCATION AND CESSATION ACTIVITIES

Changes in Cessation Activities Over Time

As medical research has increasingly related smoking to disease, efforts to aid smoking cessation have proliferated. Organized efforts to assist smokers in stopping actually began in the late 1950s with the "Five-Day Plan to Stop Smoking," developed by the Seventh Day Adventist Church (McFarland 1986). This program emphasized both the physical and psychological aspects of addiction to cigarettes. Components of the Five-Day Plan, such as a buddy system, a public pledge to stop smoking, increased physical activity, and changes in diet, are important elements of many of today's cessation programs.

Smoking cessation treatments have been available since before 1900 (Dillow 1981). Many different methods have been advocated as effective treatments for stopping smoking. These have included drug treatments such as amphetamines, tranquilizers, lobeline, and nicotine gum, hypnosis, acupuncture, professional counseling, aversive

conditioning procedures such as rapid smoking and satiation smoking, and a wide range of behavioral self-management strategies. Different types of treatments have been emphasized during different time periods: conditioning-based approaches were emphasized in the 1960s cognitively based self-management procedures were emphasized in the 1970s and relapse prevention and pharmacologic interventions were emphasized in the 1980s. The new generation of strategies concerned with relapse prevention focus attention on weight gain, high-risk situations, and cognitive and behavioral coping behaviors.

While the emphasis given to different cessation treatments has varied over time and certain relapse prevention strategies and pharmacologic approaches have been added, other specific methods for helping people stop smoking have not changed much over the past 25 years (Schwartz 1969, 1987; Schwartz and Rider 1978). The packaging and marketing of cessation aids and services have become more sophisticated, with increasing emphasis on tailoring approaches to special groups (e.g., worksites, pregnant women, and black and Hispanic smokers).

In addition, the last decade has seen a rapid increase in the accessibility of smoking intervention activities in community channels such as physicians' offices, worksites, and the media (Ockene 1987). This increasing availability of activities in the smoker's natural setting has in large part been a response to smoking as a public health issue and the recognition that about 90 percent of former smokers report stopping without the use of a special program (Fiore et al. 1988).

Smoking cessation researchers have long recognized smoking to be a complex behavior influenced by physiological, psychological, cognitive, and social factors. (See Chapter 5.) In recent years there has been a trend toward combining elements of different cessation methods into programs that respond to the multifactorial nature of smoking (Pechacek 1979; Schwartz 1987; US DHHS 1988). Research on multicomponent cessation programs has been encouraging, generally producing the best results, although evidence suggests that even with such methods the majority of smokers return to smoking within 1 year (Schwartz 1987; US DHHS 1988). In general, most cessation treatments yield l-year quit rates (based on all original participants) between 10 and 40 percent (Danaher 1980; Glasgow and Lichtenstein 1987; Schwartz 1987; US DHHS 1986a; US DHHS 1988). Variation in cessation rates among treatment methods is probably due more to differences in smoker selection of the various programs than to the treatment methods themselves (Schwartz 1987). (Table 1 provides a summary of 6- and 12-month outcomes for different cessation methods.)

Over the decades, studies of long-term outcomes in smoking cessation programs have consistently demonstrated that abstinence maintenance rates fall as time passes, making maintenance procedures an important adjunct to cessation (Hunt and Bespalec 1973; Lichtenstein and Danaher 1976; US DHHS 1986a). Thus, more recent smoking cessation research has focused on ways to prevent relapse and facilitate abstinence maintenance (Hall, Rugg et al. 1984; Lichtenstein and Brown 1983; Marlatt and Gordon 1985). Relapse prevention strategies have included: (1) efforts to teach smokers how to recognize cues to smoke and use behavioral strategies for dealing with urges to smoke (Hall, Rugg et al. 1984; Emmons et al. 1988); (2) interventions to enhance support for not smoking (e.g., extra group sessions, telephone contacts, use of spouses and

TABLE 1.—Summary of followup quit rates (percentages) of 416 smoking cessation trials, by method, reported 1959–85

Intervention method	Quit rate (at least 6-mo followup)				Quit rate (at least 1-yr followup)			
	Number of trials	Range	Median[a]	Percent 33%[b]	Number of trials	Range	Median[a]	Percent 33%[b]
Self-help	11	0–33	17	18	7	12–33	18	14
Educational	7	13–50	36	71	12	15–55	25	25
Five-day plan	4	11–23	15	0	14	16–40	26	21
Group[c]	15	0–54	24	20	31	5–71	28	39
Medication	7	0–47	18	14	12	6–50	18.5	17
Nicotine chewing gum	3	17–33	23	33	9	8–38	11	11
Nicotine chewing gum and behavioral treatment or therapy	3	23–50	35	67	11	12–49	29	36
Hypnosis, individual	11	0–60	25	36	8	13–68	19.5	38
Hypnosis, group	10	8–68	34	50	2	14–88		50
Acupuncture	7	5–61	18	29	6	8–32	27	0
Physician advice or counseling	3	5–12	5	0	12	3–13	6	0
Physician intervention, more than counseling	3	23–40	29	33	10	13–38	22.5	20
Physician intervention, pulmonary patients	10	10–51	24	20	6	25–76	31.5	50

TABLE l.--Continued

Intervention method	Quit rate (at least 6-mo followup)				Quit rate (at least 1 -yr followup)			
	Number of trials	Range	Median[a]	Percent 33%[b]	Number of trials	Range	Median[a]	Percent 33%[b]
Physician intervention, cardiac patients	5	21-69	44	80	16	11-73	43	63
Risk factor					7	12-46	31	43
Rapid smoking	12	7-62	25.5	33	6	6-40	21	17
Rapid smoking and other procedures	21	8-67	38	57	10	7-52	30.5	50
Satiation smoking[d]	11	14-76	38	64	12	18-63	34.5	58
Regular-paced aversive smoking [d]	13	0-56	29	31	3	20-39	26	33
Nicotine fading[d]	7	26-46	27	29	16	7-46	25	44
Contingency contracting[d]	9	25-76	46	89	4	14-38	27	25
Multiple programs[d]	13	18-52	32	38	17	6-76	40	65

NOTE: Quit rates provided suggest overall trends. Most quit rates were based on self-reports. Some quit rates were recalculated to include all subjects, but most quit rates were based on reports by investigators. Some quit rates omitted subjects who did not complete treatment or persons who did not reply to followups. Definitions of followup may vary between trials.

[a]Median not calculated for fewer than three trials.

[b]Percentage of trials with quit rates of at least 33 percent.

[c]Three group trials had 5-month followups.

[d]Other procedures may have been used, and some trials may be included in more than one method.

SOURCE: Schwartz (1987).

coworkers) (Lichtenstein, Glasgow, Abrams 1986; Ockene et al. 1982); and (3) cognitive interventions to facilitate changes in self-perception, attitudes, and cognitions (Lichtenstein and Brown 1983; Marlatt and Gordon 1985). In general, findings in studies using relapse prevention strategies as part of a cessation program have been inconsistent (US DHHS 1986a).

Providers and researchers also have become more responsive to the idea that smoking cessation involves a process of change rather than a discrete act. (See Chapter 5 for a discussion of stages of cessation.) The process of cessation has been characterized, for example, as occurring in four stages: precontemplation, contemplation, action, and maintenance or relapse (Prochaska and DiClemente 1983). The stage model of cessation posits that separate influences are at play at different stages and that differing interventions may need to be tailored to these stages of smoking behavior change. This stage approach to cessation intervention has evolved over the last decade and is still in an early phase of development with no data available to test its effect.

Although the number and sophistication of cessation programs have grown over the past several decades, this does not fully account for the decreasing rate of smoking, because about 90 percent of former smokers report stopping without the benefit of any program or device (Fiore et al. 1988). During this same period, a separate but related development can be traced: the growing recognition of smoking as a socially mediated practice susceptible to change in its social environment (Bailey 1986; Iglehart 1986; Nuehring and Markle 1974; Slade 1985; Warner 1986a). Although most health agencies continue to sponsor programs to assist individual smokers in stopping, these organizations also are increasingly advocating policies addressing the environmental factors that support or discourage smoking (e.g., smoking control regulations) (ACS 1976, 1978; Blum 1986; US DOD 1986, 1987; Lundberg 1985; Lundberg and Knoll 1986; Warner et al. 1986; Whelan 1984; see Chapter 7).

As noted above, the evaluation of cessation programs and techniques has been adequately covered in numerous past and recent reviews and is not the subject of this Section. (For recent extensive reviews of cessation activities, see reviews by Schwartz (1987) or US DHHS (1986a).) The remainder of this review will be devoted to a historical perspective of the efforts of the many diverse groups involved in promoting cessation activities.

National Voluntary Health Organizations

The three major national voluntary health organizations, ACS, ALA, and AHA, have played an important role over the last 25 years in disseminating information about the hazards of smoking and in providing assistance to those who want to stop. Introduced in Part I, these efforts have included such interventions as the production and distribution of print and broadcast materials, including pamphlets, posters, and television and radio public service advertising; public educational programs; direct provision of services to smokers who want to stop smoking, including self-help materials and clinics; and training and materials for such intermediaries as educators and health care providers who influence smokers to stop. While the resources devoted to the antismoking effort have varied over time and among agencies, it was estimated that the sum total of finan-

cial resources available from the major voluntary organizations has never exceeded 1 or 2 percent of tobacco industry expenditures for the promotion of cigarettes (ACS 1978). It is also true that these voluntary agencies receive support in the form of donated public service time and space and contributed effort. However, even with this support, the level of resources devoted to antismoking efforts represents a small fraction of tobacco industry expenditures to promote smoking.

In 1965, ACS initiated its "The Time to Stop Is Now" campaign based on recent epidemiologic studies showing that smokers can ameliorate the ill effects of cigarettes by quitting. ACS followed this with a series of television commercial campaigns focusing on the negative aspects of smoking. In 1968, ACS issued a posthumous PSA featuring television actor William Talman, a smoker who died of lung cancer. At the same time, ACS was producing films (one nominated for an Academy Award) and pamphlets providing advice on quitting (Patterson 1987) and was initiating a small-group public education campaign that by the late 1980s had reached more than 60 million people.

In 1964, AHA issued the pamphlet *Where There's Smoke There's Danger from Heart Disease* and in 1966 distributed to affiliates a kit containing broadcast media materials, posters, pamphlets, and newspaper features. In 1967 and 1968, AHA issued television spots highlighting nonhealth advantages of not smoking (e.g., saving money, no bad breath). In 1968, AHA produced the film "Smoking and Heart Disease" and in 1969 issued the pamphlet *How to Stop Smoking,* which was its first effort to develop material to assist smokers in stopping. Since then, AHA has produced other pamphlets and films; however, a primary focus of its smoking control efforts has been prevention of smoking by youth.

ALA, in 1965, produced a public education campaign against smoking, "New Viewpoint on Smoking," based on the 1964 Surgeon General's Report. ALA again produced significant public education antismoking materials in the late 1960s when the Federal Communications Commission (FCC) ruled that broadcasters must present antismoking public service messages to balance prosmoking advertisements (Patterson 1987). As part of this campaign, ALA produced two pamphlets, *Me Quit Smoking? Why?* and *Me Quit Smoking? How?* These booklets present the health effects of smoking and describe cigarette use as a socially learned behavior to be broken either through quitting cold turkey or by gradual withdrawal.

As noted in the previous section, in 1964 the major national voluntary and Government agencies had joined to form the National Interagency Council on Smoking and Health to coordinate antismoking activities. In general, the voluntary organizations during the late 1960s and the 1970s stressed the public health education approach to disease control rather than the legislative approach.

In 1967, attorney John Banzhaf obtained a ruling from the FCC applying the Fairness Doctrine to cigarette advertising and requiring broadcasters to provide a significant amount of time to antismoking messages to balance the prosmoking message of cigarette advertisements (Patterson 1987). In 1968, Banzhaf formed a new organization, Action on Smoking and Health (ASH), with the immediate goal of legally defending application of the FCC Doctrine to cigarettes and monitoring broadcaster compliance. (See Section on Advocacy, this Chapter).

The FCC's ruling was ultimately upheld by the Supreme Court in 1969. Beginning in mid-1967, the ruling opened the airwaves to an unprecedented barrage of antismoking messages produced by the major national voluntary agencies (Warner 1986). At its peak in 1970, the donated television and radio time constituted a subsidy of approximately 200 million dollars (in 1985 dollars) (Warner 1986). These messages probably helped contribute to changing public opinion on smoking, not only because they provided information about its health effects, but also because their mere presence on television reflected, and may have contributed to, a normative change in attitudes toward the entire issue (Warner 1978, 1986). In 1971, cigarette advertising disappeared from broadcasting, and the frequency of antismoking messages fell dramatically (Warner 1977). (See Chapter 7.)

During the 1970s the efforts of the voluntary agencies continued to focus on educating the public about the dangers of smoking, as exemplified by the title of a film produced by ALA in 1970: "Is It Worth Your Life?" ACS sponsored a series of programs on smoking cessation on the Public Broadcasting System and recruited actor Tony Curtis as its first national IQ (I Quit) Chairman. As early as 1964, ACS had used athletes and show business personalities in poster campaigns, both to draw attention to antismoking messages and to provide social validation of the messages. This trend continued through the 1980s.

In 1973, ALA was the first major voluntary organization to explicitly recognize the importance of fostering norms supportive of nonsmoking (ASH 1978). ALA had already begun addressing the issue of environmental tobacco smoke (ETS) in 1971 with a television public service campaign and a jingle, "Mind Very Much If They Smoke." This campaign and those that followed almost every year thereafter portrayed smoking as antisocial behavior and were intended both to inform smokers that their behavior offended others and to reinforce nonsmokers' rights to object to ETS.

In addressing the ETS issue, ALA had an advantage over ACS and AHA, whose activities were restricted by their mandates to control cancer and cardiovascular disease, which in the early 1970s had not yet been related to ETS. The 1972 Surgeon General's Report, the first to review the evidence that ETS harms nonsmokers, provided ALA with sufficient justification to initiate action (US DHEW 1972). In 1973, ALA established protection of nonsmokers as a major program priority and in 1975 became the first major agency to retain a full-time staff member dedicated to promoting smoking restrictions.

The nonsmokers' rights movement continued to build through the 1970s (see next section on advocacy and Chapter 7), but for the most part it was a local, grassroots campaign. In a report prepared for the Tobacco Institute, the Roper Organization (1978) called this movement "the most dangerous development to the viability of the tobacco industry that has yet occurred." The movement undercut the image of smoking as a socially acceptable and even socially necessary behavior, and it motivated many more people to join in the antismoking movement out of self-interest. However, the major voluntary organizations involved in smoking activities for the most part continued to focus their efforts on a public education approach to the smoking problem.

In 1976, ACS announced a new initiative against smoking entitled "Target 5." Among other goals, it aimed to persuade 25 percent of smokers to quit and to reduce

cigarette tar and nicotine levels by half (ACS 1976). Toward attaining the former goal, ACS in 1977 issued the "I Quit Kit," a sophisticated package of materials including booklets, posters, buttons, a calendar, stickers, and a phonograph record. The basic cessation techniques included: self-monitoring of smoking pattern, deliberate changes in daily routine, gradual reduction in the number of cigarettes smoked, and suggestions for nonsmoking maintenance. Two years later, ALA issued its "Freedom From Smoking"® program, similarly a handsomely packaged kit that has been experimentally evaluated (Davis, Faust, Ordentlich 1984).

The effort to educate smokers about the possible reduction in danger from low-tar and -nicotine cigarettes and to encourage the marketing of lower tar cigarettes culminated in the late 1970s when NCI scientist Dr. Gio Gori and a colleague published a paper speculating that some low-tar cigarettes, smoked in moderate amounts, might present little health risk (Gori and Lynch 1978). The voluntary and Government agencies responded with intense criticism. However, the perception existed among many smokers that some cigarettes are less hazardous than others (see Table 3, Chapter 4). This was probably related, at least in part, to efforts by the voluntary agencies and Government agencies suggesting that smokers could lower their risk with steps short of quitting (ACS 1978). This perception of the safe cigarette changed as evidence gathered that the use of lower yield cigarettes has almost no health benefit except for lung cancer (US DHHS 1981) and may even increase the health risk due to compensation (US DHHS 1988) (See Chapter 5).

In 1972, a no-smoking day was sponsored in Oklahoma by ALA and in 1974 in Minnesota by ALA, ACS, and AHA. In 1977, ACS adopted the Minnesota program and rechristened it "The Great American Smokeout" (GASO) (Smith 1977). The program can now be seen as a forerunner of contemporary programs to help smokers quit by fostering social support for cessation. A nationally publicized event held on the Thursday before Thanksgiving, GASO encourages antismoking activities in the community and provides materials to those wishing to conduct antismoking activities in places such as schools, worksites, and health care facilities.

Every year since 1978, ACS has commissioned a Gallup poll of public awareness and participation in GASO. Awareness has always been high; in 1978, 82 percent of adults polled were aware of GASO, a figure that reached 90 percent by 1987. Reported participation by smokers has grown over time also. In 1978, 6.7 percent of smokers interviewed reported abstaining from smoking on GASO day, with another 19.9 percent reporting they cut down. In the peak year, 1986, 12.8 percent reported that they did not smoke and 30.9 percent cut down (Figure 1).

Only two published studies provide data on how many people maintain cessation long term after GASO. In 1979, Dawley and Finkel (1981) followed 125 smokers at the New Orleans Veterans Administration Hospital who registered to quit on GASO day. Two months after GASO day, 66 percent reported that they had attempted to reduce or quit smoking on GASO day. Of those who attempted to stop smoking on GASO day, 13 percent (9 percent of the 125 smokers in the study) reported not smoking 2 months later. In 1984, Gritz, Carr, and Marcus (1988) followed a group of 240 smokers who

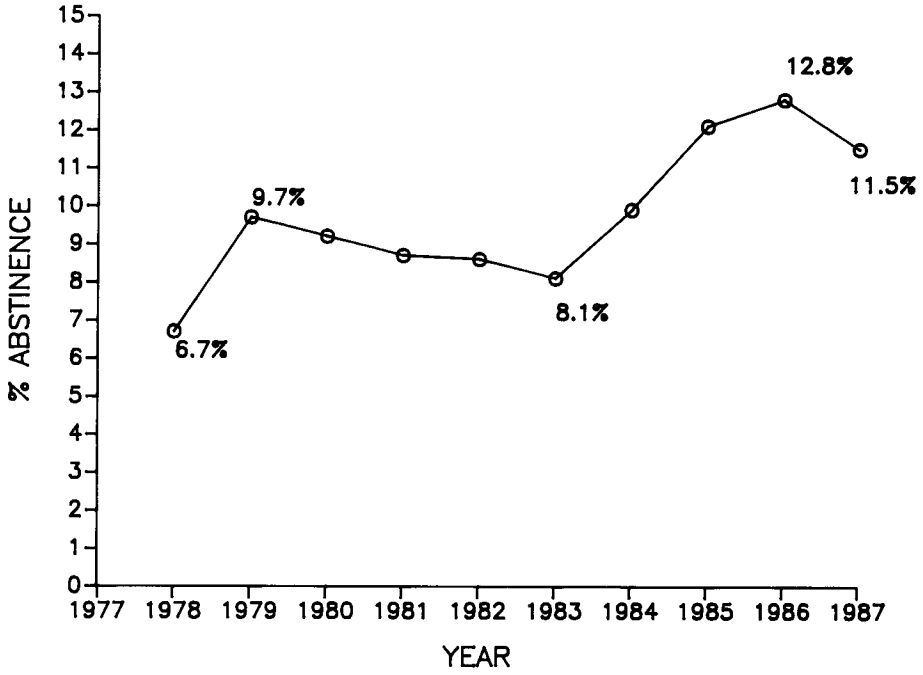

FIGURE 1.—Reported abstinence during Great American Smokeout

SOURCE:The Impact of the Great American Smokeout (1978–87), conducted by the Gallup Organization, analyzed by Lieberman Research, Inc.

pledged to quit smoking on GASO day. At l-year followup, 25 percent reported not smoking and 13 percent had continuously quit for the entire year.

The voluntary agencies increased antismoking efforts in the early 1980s. By then, three of the five television spots ALA produced every year were antismoking messages. These, as many voluntary agency spots had done, used celebrities to call attention to the health consequences of smoking. In addition to vigorously promoting GASO, ACS released a series of attention-getting PSAs, including a simulated "Smoking Fetus" spot and Yul Brynner in a posthumous plea to smokers to quit.

Building on the nonsmokers' rights movement and the trend toward health promotion at worksites, the voluntary organizations have begun actively marketing smoking policy and cessation services to businesses. ACS, with a national policy prohibiting it from charging for any services, has been limited in its activities in this area, but both ALA and AHA have developed self-supporting intervention programs ("Freedom From Smoking® at Work" and "Heart at Work," respectively). Both include consultation on the development and implementation of smoking policies and provision of cessation clinics and self-help materials.

In 1985, ALA worked with a local television news show in Chicago to produce a stop-smoking series that aired during 4:30 p.m. or 10:00 p.m. news broadcasts (Flay 1987b). The series, based on the ALA"FreedomFrom Smoking"® self-help guide, has

been replicated in about 10 cities in the United States and has been planned for several others (Flay 1987b).

ALA and ACS have also developed programs to target pregnant smokers who have often gone unnoticed. In 1988, ACS developed a smoking cessation program, "Special Delivery," designed to reach low-income pregnant women in a variety of settings where they receive prenatal health, education, and social services. The package includes a video, slides, and a stop-smoking book. In 1986, ALA developed a smoking cessation program targeted at pregnant women, "Freedom From Smoking for You and Your Baby," which is distributed to health care professionals providing services to pregnant women. The kit includes instructions to the provider, posters, and information leaflets and self-help materials for the pregnant woman. ALA has also developed a special smoking intervention program for the Los Angeles Women, Infants, and Children (WIC) nutrition program's Healthy Mothers, Healthy Babies Coalition, This smoking cessation program for low-income pregnant women enrolled in WIC began in 1986 and includes slides, handouts, and reminder messages.

In 1982, the three major national voluntary bodies formed the Coalition on Smoking OR Health.The Coalition's major roles are to monitor Federal legislative and regulatory issues and to support those promoting nonsmoking (see the next Section). In 1986 the three national voluntary organizations, through the Tobacco-Free Young America Project, extended their coordinated efforts beyond the legislative sphere and began to coordinate strategies in public education and information. This project developed an educational approach, referred to in the preceding section, intended to produce a tobacco-free high school graduating class in the year 2000 (US DHHS 1986a).

Health Professional Associations

Medical and public health groups have played an important leadership role in directing efforts to curtail smoking and its promotion (Lundberg 1985). In terms of their own smoking behavior, physicians and other health professionals were among the first groups to respond to the evidence relating smoking and disease. In the early 1950s 53 percent of U.S. physicians were cigarette smokers (Garfinkel and Stellman 1986). Subsequently, smoking rates fell steadily (US DHHS 1985a), and today, 9 percent smoke (Harvey and Shubat 1987).

Although in the early years many health professionals spoke out against tobacco, many did not fully accept the epidemiologic evidence (Patterson 1987; Rosenberg 1983). Officially, the American Medical Association (AMA) and most other medical and public health groups supported the position that research was needed to deal with the cigarette problem (Patterson 1987; Rosenberg 1983). It was assumed that smokers would stop smoking if the medical evidence linking smoking and disease was sound. With regard to public education efforts, AMA and specialty groups urged their members to persuade others to cut down or give up smoking (Cohen 1978; Rosenberg 1983) but did not otherwise extensively support public education efforts. Even today, data suggest that many physicians are not advising cessation to patients who smoke (Anda et al. 1988; Ockene et al. 1987). According to a 1986 national survey of 13,031 adults aged 17 years and older, only 45 percent of smokers reported that a physician had ever

advised them to stop smoking (Davis 1988b). In other studies it was determined that the presence of disease is positively related to whether physicians advised cessation (Anda et al. 1988; Ockene et al. 1987).

In 1964, AMA officially called smoking ". . .a serious health hazard" and recommended that health education programs on smoking be developed by AMA and be made available to the public through the media (Iglehart 1986; Lundberg 1985; Rosenberg 1983). However, no funds were appropriated to support the antismoking campaign. AMA opposed the addition of warning labels to cigarette packages, stating in a 1964 letter to the FTC that "The health hazards of excessive smoking have been well publicized for more than 10 years. . .they are common knowledge" (Rosenberg 1983). When warning labels were mandated by Congress in 1965, AMA reversed its position on the labeling issue. In 1969, AMA passed a resolution to discourage smoking through pronouncements and education programs (Rosenberg 1983).

In 1978, AMA published a report, *Tobacco and Health*, summarizing the results of a tobacco research program sponsored by the AMA Education and Research Foundation (AMA 1978) that included financial support from the tobacco industry. This report, which received wide media coverage, concluded that cigarette smoking was an important cause of cancer and chronic obstructive pulmonary disease and constituted a danger to persons with preexisting coronary disease. The preamble to the report stated that the findings from the project had not altered the conclusions of the 1964 Surgeon General's Report. Following issuance of the report, AMA allocated 45,000 dollars to support a public service antismoking campaign emphasizing smoking cessation and research (Rosenberg 1983).

Frustrated by the reluctance of medical organizations to take a stronger stand against smoking, a family physician, Dr. Alan Blum, in 1977 founded the organization Doctors Ought to Care (DOC), a group of health professionals who direct their attention at tobacco advertising (Blum 1979, 1980). (See Advocacy Section, this Chapter.) Other medical and public health organizations have recently taken strengthened stands against the tobacco industry.

In 1986, AMA accepted a proposal for a public awareness campaign that called for a localized public health initiative designed for implementation by local medical societies or individual physicians (Lundberg and Knoll 1986). The result of this proposal was the development of the "Physicians Leadership Kit" (AMA 1987). The kit contains information on developing smoke-free health care facilities, material to lobby legislators and other public health officials to enact antismoking laws, and information for presentation to school groups to encourage a tobacco-free lifestyle. The kit presents sample materials that have been used successfully in various locations around the country and includes camera-ready copies of materials that can be easily reproduced. A total of 3,000 kits was produced in 1987, with copies sent to 1,000 local medical societies and auxiliaries.

In addition to AMA, several other medical and public health groups have been active in promoting smoking control measures. As long ago as 1968, the American College of Chest Physicians (ACCP), in conjunction with the National Clearinghouse for Smoking and Health, cosponsored a national forum on office management of smoking problems (Soffer 1988). The proceedings of the conference were published in ACCP's

official journal, *Chest* (ACCP 1968). Beginning with the convocation at the 1979 Scientific Assembly and repeated at every convocation since, new ACCP fellows pledge to make their offices and clinics centers of smoking cessation (Soffer 1980). In 1982, ACCP prepared work kits for physicians to use as teaching aids in instructing patients about the dangers of smoking and techniques for smoking cessation (ACCP 1982).

In 1987, the American Academy of Family Physicians (AAFP) developed a stop-smoking kit for use by family physicians in their offices (AAFP 1987). The kit includes a physician and office staff manual, stickers to identify the charts of patients who smoke, a smoking history form, and cessation materials for patients. The American Society of Internal Medicine has produced three antismoking kits for its members, one with material for physician offices (e.g., posters, tent cards, lapel pins), another with material for lobbying, and a third with material to stimulate media coverage on smoking and health (Davis 1988b). The American Academy of Pediatrics (AAP) is a sponsor of the Tobacco-Free Young America Project (AAP 1987). The American Dental Association (ADA) in 1987 published a pamphlet describing the hazards of smokeless tobacco use. ADA has produced similar pamphlets on smoking and oral cancer.

Available evidence indicates that physicians can have a significant impact on the smoking behavior of their patients and that cessation outcomes increase as interventions such as self-help materials, development of a cessation plan, and groups are added (Kottke et al. 1988; Ockene et al. 1988; Russell et al. 1979; Russell et al. 1983). Medical organizations such as AAFP, the American Society of Internal Medicine, and the American Medical Women's Association are therefore supporting programs at their national and regional meetings to train physicians to be more effective in helping smokers to stop smoking.

Through funding in 1984 from NCI's Smoking, Tobacco, and Cancer Program, investigators involved in physician training have demonstrated that smoking intervention. training programs can have a significant impact on physician skills (e.g., Ockene et al. 1988; Wilson et al. 1988). These investigators have produced their own training packages. Other NCI-funded investigators have demonstrated the importance of office management materials that are needed to provide systematic identification of smokers, who are then given advice to stop smoking (Cohen et al. 1987; Solberg 1988). With the use of office procedures such as chart stickers and a system to monitor smokers, significantly more smokers are identified and available for physician advice. These programs indicate that physician smoking intervention skills and office practices can be improved with relatively brief training programs. Concern has been expressed, though, about the lack of coordination among the many private medical organizations and public health agencies producing materials for use by physicians to encourage smoking cessation by patients (Davis 1988b).

The contemporary efforts of medical and public health groups to curb tobacco use have recognized that smoking control efforts must not only attempt to persuade individual smokers to stop, but also must help change the social environment that supports smoking (Iglehart 1986; Lundberg and Knoll 1986; Kottke et al. 1988). This is discussed later in this Chapter.

Federal Government Cessation Support

Office on Smoking and Health

In January 1968, the National Clearinghouse for Smoking and Health worked closely with ACS and the Public Broadcasting Service (PBS) to produce the "National Smoking Test," which was aired over the CBS television network during prime time. This 1-hr program was designed to give cigarette smokers suggestions on how to stop smoking (ASH 1978).

The Clearinghouse implemented the first study of a communitywide smoking control intervention in San Diego County, CA, between 1966 and 1971 (US DHEW 1976) (see Part I). This study included interventions aimed at schoolchildren, health professionals, and adult smokers. Although evaluation of the project was limited, the data collected suggested that the intervention had been successful. Survey results showed significant reductions between 1966 and 1975 in the percentage of adult smokers in San Diego compared with those in national samples (US DHEW 1976).

The first Government antismoking poster was produced by the Clearinghouse in 1968. The poster, carrying the message "100,000 Doctors Have Quit Smoking Cigarettes. Maybe They Know Something You Don't," appeared on U.S. Post Office trucks (Davis 1988b). Between 1967 and 1971, the Clearinghouse worked with ACS, ALA, and AHA to produce antismoking messages to be aired as a result of the FCC Fairness Doctrine ruling (Patterson 1987). Over the years, OSH has planned and produced several award-winning public education and information campaigns on smoking and health (US DHHS 1986a).

National Cancer Institute: Smoking, Tobacco, and Cancer Program

As discussed in the preceding section, the primary thrust of the Smoking, Tobacco, and Cancer Program (STCP) has been to study smoking behavior and to test intervention strategies for reducing tobacco use. Research programs have been supported in the areas of adolescent smoking prevention, self-help smoking cessation, mass media approaches to smoking control, and the use of physicians and dentists as interveners, as well as in special populations including blacks, Hispanics, women, and smokeless tobacco chewers (Fanning 1988; NCI 1986a). In 1986, STCP launched a multicenter study to evaluate the impact of a communitywide intervention effort to reduce smoking prevalence, particularly among heavy smokers. Costing 42.5 million dollars over 8 years, the effort is funding 11 institutions and involves 2 million people in 22 communities in North America; 11 of these 22 communities receive support to develop and promote cessation interventions. Interventions range from communitywide approaches including mass media and environmental change to those focused on groups of individuals, such as physician counseling, worksite programs, and self-help strategies. The campaigns will be linked with the existing programs of major voluntary and civic organizations in an effort to widely disseminate intervention components (Hamm 1988; Pechacek 1988).

Although research has always been the primary mission of NCI, in the mid-1970s, it began developing broad public and professional information programs on smoking through its Office of Cancer Communications (OCC) (US DHHS 1986a). In 1977, OCC published *Clearing the Air*, a self-help smoking cessation booklet. An updated version of the booklet was produced in 1987. This booklet is among the most popular NCI publications. It has been promoted through print and television announcements produced by OSH and through the OCC supermarket distribution program. Since the booklet was first produced, approximately 7 million copies have been distributed.

In 1978, OCC, in collaboration with AAFP and ALA, produced a speaker's kit for use by physicians and local organizations to present a community-based smoking education program. The kit, entitled "Everyone Can Do Something About Smoking," consisted of a slide-tape presentation narrated by Dick Cavett, "Smoking Digest," a planner's guide, physician guidelines, *Clearing the Air*, and a community action pamphlet. It was promoted initially through AAFP and ALA chapters, which resulted in about 250 orders for the kit. In 1979, the kit was duplicated for distribution through the National Audio/Visual Center.

OCC has been active in trying to increase the involvement of health professionals in counseling patients about cessation of tobacco use (NCI 1982). In 1978, OCC produced "Helping Smokers Quit," a cessation kit for use by physicians to help their patients stop smoking. The kit emphasized the "how-to" rather than the "why" of smoking cessation and contained a physician guide, followup note, memo to the nurse, waiting room posters, and a set of materials for 50 patients (including a repackaged version of *Clearing the Air).* The kit was promoted beginning in 1978 through two national mailings of a flier to 175,000 primary care physicians, several targeted direct mailings, special activities by outside organizations, and print advertisements and editorial placements in professional journals. About 150,000 kits were distributed over a 4-year period. A qualitative assessment of the kit showed that physicians were generally positive about using the materials (NCI 1982). However, a key finding was the failure of physicians to use the followup mail piece, emphasizing the need to develop practical ways to reinforce and maintain the smoking cessation effort begun in the physician's office.

In 1979, the "Helping Smokers Quit" program for physicians was adapted for use by dentists and dental professionals (NCI 1982). The program was called "Let's Help Smokers Quit." Beginning in 1980, this program was promoted by direct mail to 137,000 dentists, 37,000 dental hygienists, and 25,000 dental assistants; by a targeted mailing to specialized dental groups; through print advertisements and editorial placements in journals; and through exhibits at dental meetings and conferences. About 50,000 kits were distributed. User evaluation of the kit in 1981 found that the majority of dentists used the kit's guidelines to counsel 25 percent or fewer of their smoking patients. Most dentists found the kit materials to be useful and practical. The waiting room posters and followup postcards were the least-used components of the kit (NCI 1982).

"Quit for Good," developed in 1982, is a combined and streamlined version of the "Helping Smokers Quit" and "Let's Help Smokers Quit" kits and is based on the evaluation results of the earlier kits (NCI 1982). It features a health professional guide, waiting room materials, and 50 sets of two patient booklets, *Quit It*, a redesigned version

of *Clearing the Air*, and a new piece, *For Good*, which focuses on maintenance of nonsmoking rather than initial cessation. The "Quit for Good" kit was promoted beginning in 1984 by direct mail to 120,000 dentists, cardiologists, chest physicians, community health physicians, and black physicians, and through print advertisements, editorial mention in professional journals, and exhibits at major medical meetings. About 60,000 kits have been distributed to date. In collaboration with ACS, the kit is currently being revised in response to user feedback and an official protocol that NCI recently developed for physician stop-smoking programs.

The "Pharmacist's Helping Smokers Quit" kit program was developed in collaboration with the American Pharmaceutical Association and is similar to the physician and dentist kits (NCI 1982). The distinctive feature of this program is its focus on drug interactions in smoking. The kit contains a pharmacist's guide, counter cards, posters, and sets of take-home materials for 25 patients. In addition, OCC and the American Pharmacological Association worked with a private vendor to produce a special patient education label for containers that warn of possible adverse smoking-drug interactions. The program was launched officially in June 1986 at a national news conference at the American Pharmaceutical Association headquarters. The kit was promoted in succeeding months by direct mail to 25,000 members of the Association, a special mailing to chain drugstore owners, and print advertisements and editorial mention in pharmaceutical journals. A second wave of direct mail promotions was conducted during summer 1987 targeting the Nation's 67,000 retail and hospital pharmacies. Response to these direct mail promotions has been about 15 percent, with about 15,000 kits distributed.

In 1976, NCI established the Cancer Information Service (CIS), a toll-free telephone public inquiry system providing information about cancer (US DHHS 1986a). CIS offices are located near major cancer research centers across the United States. In addition to providing telephone assistance, CIS offers free printed materials on subjects ranging from types of cancer and treatments to smoking cessation. Many of the materials developed by OCC are distributed through the CIS network. CIS receives approximately 80,000 calls from smokers annually. In summer 1986, OCC collaborated with the NCI Division of Cancer Prevention and Control to develop a slide training program for CIS staff to help them better counsel patients who smoke on how to stop. This represented the first formal training effort for CIS staff on the topic of smoking since the service was launched.

National Heart, Lung, and Blood Institute

Like NCI, over the years, the National Heart, Lung, and Blood Institute (NHLBI) has devoted the majority of its smoking control dollars to biomedical research documenting the health hazards associated with tobacco use. Smoking has long been identified as one of the major risk factors for cardiovascular disease and the major risk factor for chronic obstructive pulmonary disease (e.g., Doyle et al. 1964; Hammond and Horn 1958; US DHHS 1983a, 1984) (See Chapter 2.). In the mid-1970s, NHLBI undertook a number of major clinical studies to evaluate whether risk factor intervention for cardiovascular disease could influence disease rates. The best known of these studies was the Multiple Risk Factor Intervention Trial (MRFIT), a randomized controlled trial to

investigate the effect of reducing cardiovascular risk factors in a group of asymptomatic men at high risk for cardiovascular disease (MRFIT Research Group 1982). A total of 12,866 men were randomized into two groups, special intervention (SI) and usual care (UC), with similar baseline characteristics. Those in the SI group received an intensive intervention program aimed at facilitating cessation of smoking, reduction in serum cholesterol by dietary changes, and reduction of blood pressure levels for hypertensives. Men in the UC group received annual medical checkups but no special program to modify smoking or other risk factors. The smoking intervention consisted initially of 10 weekly group classes that included smoking intervention and individual cessation counseling by health counselors and physicians (Hughes et al. 1981). After 6 years, the SI group reduced its prevalence of smoking 18 percentage points more than the UC group.

More recently, NHLBI has supported cardiovascular risk reduction studies involving entire communities (US DHHS 1984, 1986a). Smoking control has been a prominent element of these clinical research studies. Currently, NHLBI is funding several research projects on the topic of relapse prevention and cessation interventions aimed at special patient populations (e.g., post-myocardial-infarction patients) (NHLBI 1988). In 1984, NHLBI began a multicenter study of early intervention for chronic obstructive pulmonary disease, the Lung Health Study (NHLBI 1986). The objective of this study is to determine whether or not an intervention program of vigorous smoking cessation and use of an inhaled bronchodilator can slow the decline of lung function over the course of the 5-year period of followup. Approximately 6,000 men and women aged 35 to 59 years who are at high risk for chronic obstructive pulmonary disease based on lung function level have been entered into the study. Followup for the study will be completed in 1993.

In 1985, NHLBI initiated the Smoking Education Program (SEP), modeled after the highly successful National High Blood Pressure Education Program (NHLBI 1988). This program seeks to identify and implement strategies to reach critical target audiences that can serve as intermediaries in reaching smokers. For example, health care professionals have frequent opportunities to advise smokers to quit and are therefore identified as key targets of SEP. SEP also is developing materials for use in worksites where employee health programs provide an effective means of risk-factor reduction.

NHLBI efforts to develop and disseminate information to health providers on smoking control initiatives began in 1983 with the publication of the physician guide *How To Help Your Hypertensive Patient Stop Smoking* (US DHHS 1983b). This 24-page color booklet presented four simple smoking cessation procedures that emphasize patient commitment and physician followup. The guide was disseminated through print advertisements, and over 30,000 copies were distributed.

In 1983, NHLBI produced “We Can’t Go On Like This,” a series of seven video vignettes developed as part of MRFIT. From 3 to 7 min long, they provide a humorous approach to the subject of helping people stop smoking permanently. Each segment of this program helps workshop participants share and express their feelings and frustrations about their decision to stop smoking (US DHHS 1986a).

In 1986, SEP produced *Clinical Opportunities for Smoking Intervention: A Guide for the Busy Physician* (US DHHS 1986e). This physician guide represented an update

of the material presented in the guide for *Counseling Hypertensive Patients To Stop Smoking.* The guide describes a variety of methods for smoking intervention, including what can be done in a waiting room and what can be done during a physical exam, and how the briefest of interventions can have an impact on patients. Support material was also developed for the guide, including a slide kit that can be used as part of a medical training program to alert health professionals to methods they can use to have an impact on their smoking patients. In addition, the program distributes outreach materials, including reproducible print advertisements and guides to State and local programs designed to reduce smoking.

In 1986, SEP produced a guide for smoking policies at the worksite. This guide, *It's Your Business: Smoking Policies for the Workplace,* includes practical information about implementing smoking policies in the workplace. Facts are provided about smoking in the workplace and the effects of involuntary smoking. Short passages about companies that have successfully implemented smoking policies are included along with a resource section. SEP is continuing to plan and develop approaches to provide practical how-to information for worksites that plan to establish smoke-free or limited smoking environments. Future SEP initiatives will focus on reaching special populations, including patients with chronic heart or lung disease, minorities, and blue-collar workers (NHLBI 1988).

A joint conference on "Smoking Policies in the Workplace: Research Needs and Potential Applications" was convened in 1987 by NHLBI, and cosponsored by NCI and the Harvard Institute for the Study of Smoking Behavior and Policy. Proceedings of this conference are forthcoming in the *New York State Journal of Medicine* (Parker and Warner 1989).

Office of Disease Prevention and Health Promotion

ODPHP conducted a survey of worksite health promotion programs that included information on smoking cessation, education, and corporate policies (US DHHS 1987). It collaborated with OSH to produce "A Decision-Maker's Guide to Reducing Smoking at the Worksite" (US DHHS 1985b). Between 1984 and 1988, the Office managed the Department's "Healthy Older People" public education program, which targeted smoking cessation as one of six health promotion subjects of importance for people over 55 years of age. The U.S. Preventive Services Task Force, created and staffed by the Office, has published recommendations for clinical settings on smoking cessation counseling, together with a supporting scientific review (U.S. Preventive Services 1988). ODPHP staffed smoking and health workshops and participated in symposia organized by the International Union Against Cancer and delivered in Bolivia and Columbia (1983) Brazil, Paraguay, Ecuador, and Panama (1984), Costa Rica (1986), and Hong Kong and China (1987).

Department of Defense

There is a strong historical link between tobacco use and the military. Until 1975, cigarettes were part of the K- and C-rations provided to soldiers and sailors. In many

military commissaries, cigarettes sell for approximately 35 percent less than in civilian stores (Blake 1985). A 1985 survey of active duty military personnel found that nearly one-half smoked cigarettes, one-quarter smoked cigars or a pipe, and almost one-fifth used chewing tobacco, snuff, or other smokeless tobacco (Bray et al. 1986; Herbold 1987). Cigarette use was more common among nonofficers and varied by pay grades, with those at the lower end of the pay scale exhibiting a higher prevalence of smoking. A 1986 Department of Defense (DOD) report estimated that smoking-related health care costs to the military were 209 million dollars in 1984 (DOD 1986).

In March 1986, prompted by the medical evidence linking smoking with disease and the high prevalence of smoking among military personnel, the Secretary of Defense initiated an intensive antismoking campaign to be conducted at all levels of all services (DOD 1987). In April 1986, a DOD smoking reduction framework defined three smoking reduction goals for the military: (1) to reduce active duty smoking and other tobacco use by 10 percent per year, (2) to provide smoking reduction information and motivation and cessation assistance to DOD personnel, and (3) to specify designated places and times where smoking can occur to minimize effects of smoking on nonsmokers (DOD 1987).

Print and audiovisual materials for the campaign were obtained from voluntary and Federal agencies. In addition, in 1986, DOD allocated 97,000 dollars for publications and 324,000 dollars for antismoking on military radio and television PSAs (DOD 1987).

Each branch of the service developed its own smoking control plan consistent with the overall goals of DOD (DOD 1987). The U.S. Air Force (USAF) modified the curricula at the Basic Military Training School, the USAF Officer Training School, the USAF Academy, and the Air Force Reserve Officers' Training Corps to include mandatory classes on the hazards of using tobacco products. Similar course material was included in all professional military education for all officers and enlisted personnel.

In June 1986, the Air Force Surgeon General directed that there be on-base smoking cessation classes at every medical treatment facility in the Air Force. Nicotine-containing chewing gum was made available in all pharmacies, and tobacco sales were discontinued at all Air Force medical treatment facilities. Smoking was banned in all hospital and clinic facilities. Smoking was also prohibited on aeromedical evacuation flights, and the Officer Training School banned smoking during duty hours.

In July 1986, the Army banned the use of tobacco products in basic training and restricted smoking in other military courses. Army training centers and service schools incorporated antitobacco information into the curriculum. Smoking cessation courses were offered to soldiers, retirees, and family members. In November 1986, the Army participated in GASO.

In March 1987, the Navy Medical Commander directed that all naval hospitals offer group smoking cessation programs and prohibited the sale of tobacco in medical and dental facilities. Curricula for all Navy personnel include information on the health risks of tobacco use. Naval hospitals stock nicotine-containing gum for members in formal cessation classes. The Navy participated in the 1986 GASO.

The Marine Corps smoking control program is similar to that offered by the Navy. Guidance and smoking cessation materials are disseminated at all accession training commands and formal schools. Family Service Centers and Alcohol Counseling

Centers provide cessation programs. Smoking is prohibited in all medical and dental facilities.

To monitor the impact of the smoking control program, DOD conducts annual tobacco use surveys of military personnel (DOD 1987). Comparison of the 1982 and 1985 DOD worldwide surveys on alcohol and nonmedical drug use among military personnel revealed that the percentage of active duty smokers has dropped significantly from 53 percent in 1982 to 46 percent in 1985 (DOD 1987) (see Chapter 5). Between November 1986 and March 1987, the monthly dollar sales of tobacco products in military commissaries dropped by 18 percent (DOD 1987). The evidence available to date suggests that the DOD antismoking campaign has been successful (DOD 1987; Institute for the Study of Smoking Behavior and Policy 1988). The impact of the campaign is still being monitored, and the issue of tobacco sales pricing policies is being reassessed.

State Health Departments

A 1987 survey of State and territorial health agencies found that 33 of 52 (61 percent) reported having sponsored smoking cessation programs (CDC 1987). Most State plans focus on prevention rather than smoking cessation.

Several States have established programs to encourage cessation by pregnant women. New Jersey, Maryland, and Pennsylvania have developed protocols for use in State-supported maternity clinics (Coye 1988; US DHHS 1986a). New York has conducted a mass media education initiative, "Healthy Mothers, Healthy Babies," to encourage pregnant women to refrain from alcohol and tobacco use (US DHHS 1986a). Many local health departments also have established programs that provide cessation activities although these are not consistently cataloged.

Three State health departments, Colorado, Maryland, and Missouri, in collaboration with the Division of Reproductive Health of CDC, are developing and implementing a Smoking Cessation in Pregnancy (SCIP) Project to be used in public prenatal clinics. The purpose of the project is to reduce the incidence of low birthweight among women using publicly funded prenatal care services. One of the interventions used will be directed at helping the women to stop smoking. It is anticipated that approximately 4,000 women will be involved in the project and that 2,000 smokers will be exposed to the smoking cessation intervention.

Commercial Ventures in Smoking Control

As the number of smokers attempting to stop has increased, so have commercial ventures to develop and market cessation aids and services. Today, for-profit stop-smoking programs can be found in almost all major cities in the United States (Schwartz 1987). This Section provides a brief review of commercial ventures in smoking cessation, focusing first on the development and marketing of pharmacologic aids, followed by a discussion of nonpharmacologic aids and behavioral and motivational programs. Pharmacologic aids have been reviewed in the 1988 Surgeon General's Report on nicotine addiction (US DHHS 1988). The description of commercial ventures in smok-

ing control is selective. Those nonpharmacologic programs described were chosen because they provide a historical perspective and have well-used national networks.

Pharmacologic Cessation Aids

Smoking deterrent drug products have been available since the early part of this century. Early drug treatments included herbs and spices and mouthwashes that altered the taste of tobacco so that smoking was less pleasant (Schwartz 1969). In 1936, Dorsey (1936) developed lobeline sulfate capsules to minimize the craving for tobacco. Lobeline sulfate is the active ingredient in Nikoban and Bantron, two popular nonprescription cessation aids available in most drugstores today. In 1982, a Food and Drug Administration (FDA) panel that reviewed smoking deterrent drug products concluded that the data were insufficient to demonstrate the effectiveness of lobeline as a smoking cessation aid (FDA 1982). A similar conclusion was reached regarding the effectiveness of drug products such as chewing gums, mouthsprays, and tablets containing silver acetate (FDA 1982). In its proposed monograph for over-the-counter (OTC) smoking deterrent drugs (FDA 1985), FDA tentatively adopted this panel's conclusions, but FDA has not yet issued a final rule. Silver acetate when combined with tobacco creates an unpleasant metallic taste in the mouth that presumably serves to discourage smoking.

Clonidine, a drug used to treat high blood pressure, currently is being investigated as an aid to help people stop smoking (Glassman et al. 1988). Interest in clonidine as a smoking cessation aid was stimulated by Glassman and colleagues (1984), who demonstrated a reduction in cigarette urges associated with its use. It is speculated that clonidine may relieve nicotine withdrawal symptoms through its effect on the central nervous system's adrenergic mechanism (Glassman et al. 1984, 1988; US DHHS 1988). Boehringer Ingelheim Pharmaceuticals, Inc., currently is conducting studies to evaluate the effectiveness of a clonidine transdermal patch as a smoking cessation aid. Clonidine is not currently approved for marketing as a smoking cessation aid by FDA.

To date, the most successful and effective drug product developed to assist smokers in stopping is nicotine polacrilex gum, a nicotine-containing chewing gum (US DHHS 1988). It is marketed by Lakeside Pharmaceuticals, a Division of Merrell Dow. Nicotine-containing gum was developed on the premise that nicotine is the primary reinforcer of smoking. It was reasoned that a product that could deliver nicotine into the body in a form with lower potential to produce dependence could aid smokers in stopping (Femoe, Lichtneckert, Lundgren 1973).

Nicotine-containing gum was first developed and manufactured by A.B. Leo in Sweden in 1971. Early studies with the gum showed poor results. However, a carbonate buffer added to improve absorption of nicotine improved cessation rates (Axelsson and Brantmark 1977).The main benefit associated with gum use is the alleviation of withdrawal symptoms. Several studies have demonstrated the effect of nicotine-containing gum in relieving irritability, anxiety, problems in concentrating, restlessness, and hunger (Hughes and Miller 1984; Schneider, Jarvik, Forsythe 1984; US DHHS 1988). Studies suggest that the gum does not fully replace the nicotine provided by cigarette smoke. Benowitz, Jacob, and Savanapridic (1987) reported that chewing 2-

mg nicotine gum on an hourly schedule for 10 hr yielded blood nicotine levels comparable to one-third that achieved while smoking. Use of a 4-mg nicotine gum causes a greater increase in blood nicotine levels and may increase cessation rates (Tonnesen et al. 1988). However, only the 2-mg dose is approved for use in the United States (US DHHS 1988).

Numerous studies have reported on the efficacy of nicotine polacrilex gum in achieving smoking cessation (Schwartz 1987; US DHHS 1988). Many of these studies are well-controlled double-blind investigations comparing nicotine-containing gum with a placebo gum (British Thoracic Society 1983; Campbell, Lyons, Prescott 1987; Fagerstrom 1982; Fee and Stewart 1982; Hall et al. 1987; Hjalmarson 1984; Jamrozik et al. 1984; Jarvis et al. 1982; Puska, Bjorkqvist, Koskela 1979; Schneider et al. 1983; Tonnesen et al. 1988). No studies to date have compared nicotine-containing gum with other cessation drug products, such as those containing lobeline or clonidine (US DHHS 1988). Not all studies have shown nicotine polacrilex gum to be effective (British Thoracic Society 1983; Campbell, Lyons, Prescott 1987; Fee and Stewart 1982; Jamrozik et al. 1984). Long-term cessation rates (over l-year followup) vary widely from 3 to 49 percent (US DHHS 1988). Nicotine-containing gum has become an increasingly popular adjunct to behaviorally based cessation programs. Studies suggest that behaviorally based treatment in conjunction with nicotine polacrilex gum tends to be more effective than the same program without gum, or compared with gum alone (Fagerstrom 1982; Hall et al. 1987; Killen, Maccoby, Taylor 1984).

FDA approved the marketing of nicotine-containing gum in the United States as a prescription smoking cessation aid in January 1984 (IMS 1984). The product became available to the public in mid-March of that year. It retails for about 18 dollars for a box of 96 pieces. A mailing piece introducing the gum was circulated to 77,000 physicians (IMS 1984). In the 4 months after FDA approval of nicotine polacrilex gum, Merrell Dow spent more than 4 million dollars to launch the product (IMS 1984). Over 80 percent of promotion dollars was used for in-person promotion in physicians' offices and other health care settings. The result of this massive promotional campaign was one of the fastest selling prescription products ever introduced (IMS 1984). Sales were 42 million dollars in 1984, 46 million dollars in 1985, 54 million dollars in 1986, and 60 million dollars in 1987.

As part of its promotional campaign, Merrell Dow has supported many medical symposia on smoking, underwritten the cost of a newsletter on smoking cessation sent to over 40,000 physicians annually, and helped support the development and distribution of training materials on smoking cessation for health professionals.

Since the gum was introduced in March 1984, an estimated 4 to 6 million smokers (approximately one-tenth) have used it. Surveys of gum users show that two-thirds of prescriptions are generated by the patient rather than the physician. Lakeside advertising in public media (which does not mention the product or brand name) encourages smokers to ask their physicians for help in stopping smoking. The commercial success of nicotine polacrilex gum is likely to encourage other pharmaceutical companies to consider developing and marketing cessation drug products. Several nicotine-containing products are under investigation as cessation aids, including nasal nicotine solutions, nicotine dermal patches, and nicotine aerosols (US DHHS 1988).

Nonpharmacologic Cessation Aids

A variety of nonpharmacologic aids have been produced over the years to assist smokers in reducing or stopping smoking, including filter systems, smokeless cigarettes, self-help books, audiotapes, and more recently, videos (Schwartz 1987). Evidence regarding the effectiveness of these cessation aids is extremely limited or nonexistent. Many companies have developed cigarette filter systems to help people stop smoking. The basic idea behind a filter system as a cessation aid is to reduce the amount of nicotine taken in, allowing smokers to wean themselves from the chemical addiction (Schwartz 1987). One of the most popular filter systems available, One Step at a Time, manufactured by Teledyne Water Pik, was first marketed in 1977 and is sold primarily through chain drugstores and advertised in conjunction with local retailers. The filter system consists of four reusable filters, each of which further reduces the amount of tar, nicotine, and carbon monoxide from cigarette smoke. Each of the filters is to be used for 2 weeks. The One Step at a Time filter system sells for about 10 dollars. Teledyne Water Pik also markets a single filter system called Step Four, which is the fourth filter in the filter system and sells for about 5 dollars. In the FDA's 1980 response to a petition filed by Action on Smoking and Health for the regulation of cigarette filters as medical devices (FDA 1980), the agency concluded that some of the labeling and advertising for detached cigarette filters established intended therapeutic uses for One Step at a Time and certain other products. Thus, One Step at a Time and certain other detached cigarette filters were considered as medical devices within the agency's jurisdiction.

Smokeless cigarettes that simulate the taste of tobacco smoke are another popular cessation aid. E-Z Quit, a smokeless cigarette sold through a mail order company, consists of a plastic cigarette with three menthol flavor capsules. The product sells for about 10 dollars and is widely advertised in popular magazines and newspapers. E-Z Quit was designed to deliver flavoring ingredients through inhalation, and was intended and labeled for use as a smoking deterrent. Products so formulated and labeled are regarded by the FDA as drugs and have been included in the agency's ongoing OTC drug review. Under this review, in 1982 an Advisory Review Panel (FDA 1982) concluded that the data are insufficient to demonstrate the effectiveness of such products as smoking deterrents. In 1985 the FDA tentatively concurred with this conclusion in its proposed monograph (FDA 1985). A final rule has not yet been issued.

Dozens of different how-to-quit-smoking books have been produced. Many of the books are written by former smokers and psychologists who provide a wide range of suggestions on how to stop smoking. Studies evaluating the efficacy of quit-smoking books have reported mixed results (Cummings et al. 1988; Davis, Faust, Ordentlich 1984; Glasgow and Lichtenstein 1987; Glasgow and Rosen 1978; FDA 1982). In general, the findings of studies comparing the effectiveness of different quit-smoking books suggest that no one book appears to be better than any other. The addition of a personal contact to the provision of written materials appears to enhance quitting behavior (Flay 1987b; Kottke et al. 1988). Many bookstores also sell audiotapes on how to stop smoking. In 1985, ALA produced "In Control,"® a smoking cessation video program that smokers can use at home on a videocassette recorder. "In Control" runs for 2 hr and consists of 13 segments that viewers are encouraged to see on different days. Users also receive a 124-page viewer guide and a 20-min audiotape with motivational and relaxation messages. The package sells for 60 dollars. A recent evaluation of the program, which did not use a control group, involved 100 smokers and found that 53 completed the program, with 31 verified abstinent by carbon monoxide testing 1 month after completion. Twenty-one of the 100 smokers who started the program

were not smoking 1 year after completing it and 16 of these reported total abstinence during the l-year followup period (Marston and Bettencourt 1988). ACS recently produced the ACS Freshstart video, a 21-day program that focuses on maintaining cessation (i.e., quit day is day 1). The video sells for about 20 dollars.

Recently, Health Innovations, Inc., developed and began marketing a computer-assisted smoking cessation program called "LifeSign." "LifeSign" consists of a credit-card-sized microcomputer and self-help booklet. The microcomputer is used to assist smokers in designing a tailored, gradual cutdown program that helps the smoker withdraw from the nicotine in cigarettes. Two studies of "LifeSign" show validated 6-month cessation rates of 18 and 28 percent (Frederiksen et al. 1988). However, both of these studies were based on small samples of self-selected smokers and did not involve comparisons with other cessation interventions.

Stop-Smoking Programs

Hypnosis has long been advocated as an effective treatment for stopping smoking (Schwartz 1987). A review of smoking cessation treatments listed in the telephone yellow pages of 47 U.S. cities found that hypnosis was the most frequently advertised service (Schwartz 1987). Hypnotists accounted for 31 percent of all services listed. The intent of hypnosis as a smoking cessation treatment is often to increase personal motivation to stop smoking (Spiegel 1970). This is usually done by posthypnotically suggesting a link between smoking and unpleasant experiences (e.g., "smoking is a poison"). Many hypnosis techniques are similar to behavioral therapy methods (e.g., relaxation training, increased awareness of smoking cues), making it difficult to distinguish the specific effects of hypnosis. Spiegel (1970) suggests that hypnosis alone does not make a person stop smoking, but when combined with motivation, helps the subject concentrate on changing his or her smoking behavior. Schwartz's review of 31 hypnosis trials concluded that hypnosis, when used as the only cessation method, is ineffective (Schwartz 1987).

More recently, acupuncture has been touted as an effective treatment for smoking cessation (Schwartz 1987). Acupuncture involves the use of needles or staplelike attachments placed in the nose or ear (Schwartz 1987). The mechanism by which acupuncture may help a person stop smoking is not clear. Several investigators suggest that acupuncture relieves smoking withdrawal symptoms, although there is little evidence to support this claim (Fuller 1982; Schneidernan 1981). Others suggest that the effect of acupuncture is psychological and depends on personal motivation to stop smoking (Machovec and Man 1978; Martin and Waite 1981). Studies that evaluate acupuncture as a smoking deterrent vary widely in the methods used and in the cessation rates reported (Schwartz 1987).

One of the oldest and most successful commercial cessation programs is SmokEnders, which was started by a former smoker, Jacquelyn Rogers, in 1969. Headquartered in New Jersey, SmokEnders has chapters or franchises in many U.S. cities and in several foreign countries (Schwartz 1987). The program consists of six 2-hr sessions held over a 6-week period. Classes are conducted by former smokers who are graduates of the SmokEnders program. The program emphasizes motivation for stopping and brand switching, as well as behavioral and cognitive skills for gradually reducing the amount smoked. In 1985, Comprehensive Care Corporation purchased the license to operate SmokEnders. However, the program is basically the same as the one developed by Rogers in 1969. The cost of the program varies by location, ranging from 225 to 300 dollars. Since SmokEnders was established in 1969, an estimated 600,000 smokers have completed the program.

The Schick Stop Smoking program, started in 1971, was the first well-known commercial program to use counterconditioning techniques to help people stop smoking (Smith 1988). The Schick Stop Smoking program includes three phases: a l-week preparation phase, a l-week counterconditioning phase, and a support phase (Smith 1988). In the preparation phase, smokers are instructed to keep a record of each cigarette smoked. The counterconditioning phase of the program consists of five 1-hr treatment sessions held on consecutive days. Two counterconditioning techniques--mild electric shock to the wrist and quick puffing on a cigarette--are used to attach negative experiences to common cues for smoking. In the support phase, clients return to the center for group counseling, receive weekly telephone contacts, and have one additional counterconditioning session. The program is run by trained nonmedical personnel and treats about 2,000 smokers annually. The cost of the program is 595 dollars.

Worksite and Hospital Wellness Programs

Stimulated by both public and private initiatives, an increasing number of businesses have adopted policies that either limit or ban smoking at work (Bureau of National Affairs 1987; Orlandi 1986; US DHHS 1986b; Martin, Fehrenbach, Rosner 1986) (see Chapter 7). This trend has resulted in an increased demand for smoking control programs offered at worksites. Worksite programs have the advantage of having an available defined population that can potentially be reached. Many organizations have attempted to capitalize on the demand by developing and marketing smoking control programs specifically for worksites (Newsweek, August 29, 1988). The efficacy of worksite smoking programs was reviewed in the 1985 Surgeon General's Report (US DHHS 1985a), which presented somewhat disappointing results. Since that review, other outcomes have been somewhat more encouraging (e.g., Omenn et al. 1988).

In 1980, Control Data Corporation began marketing "Stay Well," a health promotion program designed for businesses (Anderson and Jose 1987). The smoking control component of the "Stay Well" program is called "How to Quit Smoking" and consists of eight 1-hr group sessions conducted over 7 weeks. The program emphasizes nicotine fading and behavioral coping skills. When the program was first introduced in 1980, classes were conducted by staff from Control Data. However, this proved to be costly and limited the geographical reach of the program. In 1982, the "Stay Well" program began licensing hospitals to deliver and market the program. Today, there are 50 licensed distributors located in most major population centers. More than 600 corporations have used the "How to Quit Smoking" program. The cost of the program varies by distributor, ranging from 35 to 80 dollars per smoker.

Johnson and Johnson, Inc., has recently begun marketing "Live for Life" (LFL), a wellness program designed for the workplace (Wilbur 1983). The smoking cessation component of LFL includes an annual health screen with medical advice on smoking, environmental changes to support nonsmoking, and regularly scheduled stop-smoking classes. Classes consist of 14 1-hr sessions held over a 3-week period. Smoke holding, group support, relaxation training, and behavioral coping skills are the primary elements of the program (Shipley et al. 1988). A recent report on the effectiveness of the

LFL stop-smoking program showed that in four companies exposed to the program, 23 percent of smokers were not smoking 2 years later compared with 17 percent in three matched comparison companies (Shipley et al. 1988). Among smokers in the LFL companies, 21 percent enrolled in the stop-smoking classes and 32 percent of these were not smoking after 2 years (Shipley et al. 1988).

In 1976 the American Institute for Preventive Medicine began marketing a stop-smoking program called "Smokeless." The program includes five 1-hr sessions held on consecutive days, plus three maintenance classes spread over 2 weeks (Powell and McCann 1981). The program instructs smokers in a wide range of behavioral and cognitive coping skills and includes some mild counterconditioning procedures (e.g., "pinky puffing" (puffing a cigarette while holding it between the pinky and ring finger)), loud white noise, filters dipped in anti-nail-biting solution). "Smokeless" has recently been adapted into a self-help format that sells for 39 dollars. The self-help program is packaged in an attractive kit with six booklets and a relaxation audiotape. The Institute also markets a guide for establishing a smoking policy in the workplace. "Smokeless" is licensed to hospitals or businesses to use and market program materials. Hospitals in turn will offer the program to people in the community. Corporate affiliates offer the program solely to their own employees. Each hospital affiliate is responsible for marketing the program in a defined geographic region. Since 1983, 250 hospitals and several large corporations have been licensed to conduct "Smokeless," although this does not mean that they actually run the program. The Institute conducts a 3-day training seminar on how to run the program and provides each trainee with a set of materials. The Institute also assists hospital affiliates in marketing the program. Program materials are sold to the affiliate hospital or corporation for 30 dollars per person. The fee for "Smokeless" varies by affiliate, ranging from 75 to 225 dollars per smoker.

Smoke Stoppers is another commercial stop-smoking program that licenses hospitals and other outlets to use its materials. The program is marketed by the National Center for Health Promotion in Ann Arbor, MI. The format of Smoke Stoppers is similar to that of "Smokeless," with five classes in the first week, followed by three maintenance sessions. Outlets certified to conduct Smoke Stoppers programs are given exclusive rights to market the program in a defined geographical region. All Smoke Stoppers instructors are required to be former smokers and must attend a 40-hr training program. Program materials are sold to affiliates at a cost of 39 dollars per person. The fee charged to smokers varies by outlet, averaging about 150 dollars per person. Smoke Stoppers was established in 1977 and has licensed over 300 outlets to conduct programs.

One of the 1990 Health Objectives for the Nation calls for at least 35 percent of all workers to be offered employer/employee-sponsored or -supported smoking cessation programs either at the worksite or in the community. While there are no national data available to measure the percentage of all workers who have access to such a program, a 1985 survey, the National Survey of Worksite Health Promotion Activities, gathered data on smoking cessation programs in worksites with 50 or more employees, which is reflective of approximately 58 percent of the U.S. workforce (US DHHS 1987). Preliminary analyses indicate that approximately 36 percent offer some kind of smoking cessation program. Due to the incompleteness of the data, evaluation of progress toward achievement of the objective cannot be adequately accomplished.

In addition to offering cessation programs, businesses are increasingly providing incentives to employees to encourage them to stop smoking (Orleans and Shipley 1982). A small ambulance company in Oregon offered a 5 dollar monthly bonus to any employee who did not smoke during work hours. As an added incentive, the accumulated bonuses for the year were matched at Christmastime. After 1 year, 4 of the 16 smokers claimed abstinence from smoking at work (Rosen and Lichtenstein 1977). Smokers employed at a hospital in upstate New York were offered the chance to win a 250 dollar cash prize if they stopped smoking for 1 month. Of all smokers, 14 percent enrolled in the contest, and 36 percent of these enrollees were not smoking 3 months after the contest ended (Cummings, Hellmann, Emont 1988). A common type of incentive is the offer to pay part or all of the cost to attend a cessation program. Campbell Soup Company splits the cost for employees to attend an onsite smoking cessation program (Schwartz 1987). General Motors absorbed 75 percent of the fee for a smoking cessation program offered to employees (Schwartz 1987). The evidence available does suggest that incentives can serve as a useful adjunct to other cessation services in the workplace (Klesges, Vasey, Glasgow 1986; US DHHS 1985b).

Summary

The Chapter 8 Appendix includes a chronology of key events that have influenced smoking education and cessation activities over the past 25 years. The antismoking campaign of the 1960s focused primarily on educating the public about the health hazards of tobacco use (Warner 1986). An assumption underlying the early antismoking efforts was that an informed public would discontinue smoking. This assumption was not without merit in that cigarette consumption did fall significantly in response to information about the dangers of cigarette use (Hamilton 1972; Warner 1977, 1981, 1986). However, the assumption that smokers merely needed to be motivated to stop ignored the addictive nature of smoking and the fact that many found it extremely difficult to stop smoking (US DHHS 1988).

The 1970s saw an increased emphasis on devising methods to assist smokers in stopping and staying off cigarettes (Schwartz 1987), with special attention to cognitively based self-management approaches.

The 1980s have seena renewed emphasis on educating the public about the hazards of tobacco use and increased efforts to recruit smokers to attempt cessation. Such an emphasis seems appropriate given the fact that the vast majority of smokers need first to be persuaded to stop before efforts are directed at offering assistance in stopping.

The national voluntary agencies, especially ACS, ALA, and AHA, have played a significant role in educating the public about the hazards of tobacco use. This has been achieved through a wide variety of interventions including the distribution of educational materials, sponsorship of cessation programs, and production and dissemination of PSAs that carry an antismoking message. Although the smoking education efforts of the national voluntary health agencies have been the most visible of any group, some critics note that more might have been accomplished if a higher level of interagency collaboration had existed. In 1978, a blue ribbon panel of experts commissioned by ACS to study the problem of smoking and the effectiveness of antismoking activities

concluded that the major voluntary health organizations should actively pursue increased coordination of their efforts and resources in producing materials to assist smokers in quitting (ACS 1978).

Until the 1980s the voluntary health agencies focused their efforts on educating the public about the facts on smoking and health and did little to initiate political and legal challenges to the tobacco industry (Patterson 1987). The formation of the Tri-Agency Coalition on SmokingORHealth in 1982 represented a major shift in the smoking control focus of the voluntary health agencies. The Coalition was formed primarily to promote cooperation in obtaining legislation on smoking control issues.

Government smoking control efforts have been characterized by some observers as modest (ACS 1978). OSH, the only Federal agency devoted exclusively to the smoking issue, today has a budget that, in real dollars, is roughly one-half of the budget in 1966 when its predecessor, the National Clearinghouse, was established. (See Chapter 7.) Federal spending on smoking control has increased over the years, with the majority of funds supporting research rather than interventions. In recent years, there has been a shift away from supporting biomedical research on the hazards of tobacco to supporting studies on the behavioral aspects of smoking, including smoking cessation. However, there is little evidence of transfer of research findings to community settings, and some observers have questioned whether limited public health resources should be disproportionately expended on treating smokers individually or in small groups, to the exclusion of mass media and public relations efforts aimed at changing the social, economic, and political environment that supports smoking (Chapman 1985). NCI now emphasizes support of studies that investigate effective application and dissemination of smoking programs (Fanning 1988; NCI 1986b)and NHLBI is supporting large community programs of applied research that include smoking (US DHHS 1984, 1986a).

The opportunity to develop and market cessation aids and programs has expanded in the past decade as more smokers have attempted to stop. The use of pharmacologic therapies to aid cessation increased markedly with the introduction of nicotine polacrilex gum in 1984. Alternative methods of nicotine replacement are currently under investigation along with other pharmacologic cessation approaches (e.g., clonidine) (US DHHS 1988). In addition to pharmacologic aids, behaviorally oriented cessation programs, particularly those targeting worksites, have increased in the past decade. Likewise, greater efforts are now being made to increase involvement of physicians and other health care professionals in smoking intervention.

In general, different types of smoking cessation strategies (e.g., condition- or cognition-based) have been emphasized during different time periods, new strategies have been added, and some specific behaviorally oriented smoking cessation strategies appear to have changed relatively little in the past 25 years. The packaging and marketing of these programs have also become more sophisticated, with an increased emphasis on targeting specific groups of smokers (e.g., pregnant women, Hispanics, blacks). There has been a gradual shift in the way cessation interventions are promoted from approaches that largely require smokers to seek assistance on their own to more aggressive strategies that actively recruit smokers to seek help and stop. Examples of active recruitment strategies include televised stop-smoking clinics (Flay 1987b) and contests and competitions to promote abstinence behavior (Cummings, Hellmann, Emont 1988;

King et al. 1987; Klesges, Vasey, Glasgow 1986). The level of smoking cessation activity has increased in recent years, spurred by regulatory decisions restricting smoking (Chapter 7) and changing public perceptions and attitudes regarding tobacco use (Chapter 4).

A significant event in terms of promoting smoking cessation activities of the national organizations was the 1967 FCC ruling applying the Fairness Doctrine to broadcast cigarette advertising. This policy prompted organizations to become involved in activities such as production of PSAs. The next chapter will cover this and other policy activities. Evidence indicates that the resulting increase in the volume of antismoking messages helped contribute to a substantial decline in cigarette consumption (Hamilton 1972; Warner 1977, 1981, 1986).

The last 25 years have seen an increase in smoking cessation research and the implementation of numerous public health approaches designed to help people stop smoking. Working toward an integrated approach of policies and programs in the available community networks seems to be a direction in which the smoking-and-health campaign is moving (US DHHS 1986b).

PART III. ANTISMOKING ADVOCACY AND LOBBYING

Nature and Objectives of Advocacy and Lobbying

Individual citizens and organized groups have played an active role in the development of public and private policies affecting smoking and the cigarette product. Their activities range from efforts to inform and educate individuals and the public at large about the health consequences of smoking to advocacy and lobbying to influence policies and legislation to prevent or reduce smoking. The latter are considered in this concluding part of the present chapter as a bridge between voluntary antismoking activities and mandated activities (Chapter 7). Advocacy and lobbying are undertaken voluntarily by private citizens and organizations, but with the intent of influencing smoking-related laws and regulations.

Development and implementation of health information and education strategies are oriented toward providing or imparting information to teach or instruct, often with a view toward influencing thought and behavior. Earlier parts of this Chapter and other sections of this Report address information and education activity as a component of health education efforts designed to provide antismoking messages. As discussed in this Chapter, several such efforts incorporate advice and instruction on how to remain or become a nonsmoker.

Advocacy encompasses efforts to shape opinion in support of public policy. Lobbying, in its strictest sense, means directly attempting to influence legislators, especially in favor of a special interest. Frequently, lobbying also is used to mean directly trying to influence officials to take desired action, or to influence the political process toward a specific outcome. Despite these definitions, advocacy and lobbying activities often overlap and their distinction is not always clear.

A primary purpose of these pursuits is to shift perceptions and attitudes about smoking: to change from viewing smoking as a matter of personal choice toward viewing smoking as a significant public health problem requiring adoption of public health policy interventions. Antismoking advocacy and lobbying both recognize and act on the fact that smoking is a political as well as a health, social, and economic issue.

Few antismoking advocacy and lobbying efforts have been studied systematically, making it difficult to attribute changes in policy or public opinion to a specific group or activity. Furthermore, little exists in the published literature on smoking that describes the advocacy and lobbying activities of groups or individuals or evaluates the impact of those activities on public awareness or public and private policies regarding smoking. For example, the available data show that public support for restrictions on smoking in public and at work has increased substantially in recent years (Chapter 4). A temporal relationship can be demonstrated between this increasing support and the growth of antismoking advocacy and lobbying activities targeted at these same issues. It is not clear, however, to what extent changing public attitudes led to or followed advocacy efforts.

Analyses of the relationship between legislative lobbying activities and the enactment of legislation have been predominantly qualitative. For example, an analysis of lobbying efforts for the introduction and subsequent passage of the Comprehensive Smoking Education Act of 1984 (Public Law 98-424) concluded that the Coalition on Smoking OR Health, a group representing ACS, AHA, and ALA, significantly influenced passage of the Act. The analysis also concluded that the "woeful miscalculations of the tobacco lobbyists" made a significant contribution to the outcome (Pertschuk 1986).

Objectives

Smoking-and-health advocacy and lobbying efforts during the 25 years since the first Surgeon General's Report have centered on a number of specific objectives, including: broader and more effective dissemination of information on the hazards of smoking; provision of increased resources for research, public education, and prevention; reduction in consumption and encouragement of cessation by smokers; prevention of uptake by children and adolescents; creation of public support for policies to restrict or prevent smoking; protection of nonsmokers from exposure to environmental tobacco smoke; regulation of the contents and emissions of the cigarette; regulation of the marketing, promotion, and advertising practices related to tobacco products; limitation on access through restriction of the sale and distribution of cigarettes (e.g., through vending machines and free samples); increase in the price of smoking through taxation of cigarettes; and stimulation or creation of public demand for political action on a specific policy or issue. Many of the advocacy and lobbying groups active since 1964 have pursued a variety of these objectives with varying degrees of activism and political involvement.

The origin and objectives of the National Interagency Council on Smoking and Health, the first major organization created in response to the 1964 Surgeon General's Report, provide an illustration of the variety of purposes diverse groups may want to achieve, individually or jointly.

Following the release of the Report, Surgeon General Luther Terry called together representatives from the major national voluntary health agencies to discuss what actions might be taken in response to the Report. One result of this meeting was the creation of the National Interagency Council on Smoking and Health, which included among its members the voluntary health agencies, a variety of medical and health professions groups, organizations such as the National Congress of Parents and Teachers, and Federal agencies such as the Public Health Service and the Veterans Administration. By 1969, the Council's membership included 25 national organizations and 3 Government agencies.

The purpose of the Council was "(1) to use its professional talents to bring to the nation--particularly to the young--an increasing awareness of the harmfulness of cigarette smoking; (2) to encourage, support and assist national, State, and local smoking and health programs; and (3) to generate and coordinate public interest and action related to this area of health" (Diehl 1969). The Council's statement of purpose reflects an early perception that stimulating some form of public interest and action would be necessary to achieve other Council purposes related to smoking and health.

The Council did not initiate its own programs of education or intervention, however, and operated on a very small budget contributed by the member organizations. Its activities in the area of advocacy were extremely limited, although it spawned much activity at the State and local levels that has carried over into the present. The lnteragency Council became the principal national forum for the exchange of information and coordination of efforts among the many groups concerned about smoking.

In addition to the National Interagency Council, there were 40 State and many city interagency councils in operation with the primary function of coordinating and stimulating action by member groups (Diehl 1969). These State and local interagency councils consisted, in large part, of the State and local affiliates of the national groups represented in the National Interagency Council.

Troyer and Markel (1983) analyzed the announcements and proposed actions of health groups regarding smoking as reported in the press during the period 1954-78. They found that through 1973, the overwhelming majority of announcements and actions (26 of 29) were targeted toward education and persuasion, while during the period 1974-78, almost all (9 of 10) were focused on laws and regulations restricting smoking. The reasons for the initial apparent prioritization of information and education activities are not known, but it is clear that during the early period of antismoking efforts, the major groups considered their primary contributions to be made by informing the public and testifying before legislative groups, not by lobbying for specific regulations or motivating the public to political action. For example, AHA stated in 1967 that "its 'proper responsibility' involved testimony on the health hazards of smoking, not legal action" (Troyer and Markel 1983).

Over the years, the national voluntary agencies and other significant organizations have continued their critical information and education activities, as described in Parts I and II of this Chapter. More recently, many of these organizations have begun to supplement their more traditional educational campaigns with more active efforts in support of specific heath policy outcomes. Accordingly, they have emerged as strong advocates in support of antismoking policies. In addition, as part of a health strategy,

some have developed specific components within their organizations, and sometimes have fostered special coalitions to advocate or lobby for specific purposes on behalf of their organizations.

A significant example is the Coalition on SmokingORHealth, an organization formed in 1982 to initiate and coordinate antismoking lobbying activity on behalf of ACS, AHA, and ALA, and to supplement the more traditional information and education approaches of these three organizations. The Coalition's statement of purpose reflects its emphasis on political action in support of smoking and health issues:

> To more effectively bring tobacco and health issues to the attention of federal legislators, administrators and other public officials; . . . to work with legislators and other government officials to enact policies which will discourage tobacco use, further educate the public about the hazards of tobacco use, and limit the demand for and marketing of this deadly product in the future (ACS 1988).

Organizational Characteristics

Five relatively distinct types of groups operating at the national, State, or local level carry out smoking control advocacy and lobbying activities. The first group, and perhaps the largest and most visible, is composed of the three major national voluntary health agencies (ACS, ALA, and AHA) and their State and local affiliates. Each of the three agencies concentrates primarily on research and public education related to the diseases of interest to the agencies, and delivery of services to those affected by such diseases. In addition to forming the Coalition on Smoking OR Health, each also has become more focused on leadership in health policy development, and has increased its level of interest and participation in advocacy and lobbying. Much of what the voluntary health agencies are allowed to do in this regard may be affected by both their Internal Revenue Code status as nonprofit agencies and the Tax Reform Act of 1976, which specifies permissible lobbying activites by nonprofit groups.

The second group is made up of special focus or special population organizations that have targeted their efforts on a particular aspect of the smoking problem or a specific approach. This group includes such organizations as Action on Smoking and Health (ASH), which has pursued a legal action campaign to force legislators and regulatory bodies to address a variety of aspects of the smoking problem; Stop Teenage Addiction to Tobacco (STAT), which focuses on teenage tobacco issues; the Tobacco Products Liability Project (TPLP), which, as a public health strategy, supports efforts to bring product liability lawsuits against cigarette manufacturers; and Doctors Ought to Care (DOC), founded to provide physicians with a rallying point for health promotion and antismoking advocacy, especially through counteradvertising. These groups are more involved in advocacy than in lobbying.

The third group is composed of health and health professions organizations such as the American Medical Association, American Public Health Association, American Dental Association, American Academy of Pediatrics, American College of Chest Physicians, American Medical Women's Association, American Academy of Family Physicians, American Society of Internal Medicine, American College of Obstetricians and Gynecologists, and American Association for Respiratory Care. These groups in-

creasingly have promoted a role for their members as advocates for smoking control in their respective communities, in addition to engaging, as organizations, in advocacy and lobbying activities at the Federal level.

Organizations devoted to the rights of and protections for nonsmokers make up the fourth group. This would include organizations such as Americans for Nonsmokers' Rights, the only national antismoking group devoted solely to clean indoor air legislation. Other examples would be the numerous State and local groups that have formed independent chapters of Group Against Smoking Pollution (GASP) or that focus on nonsmoker protection and nonsmokers' rights. There are approximately 85 such groups at the State and local level (unpublished data, OSH).

The fifth group is made up of antismoking coalitions (groups of organizations) operating at the national, State, and local levels. Such coalitions have formed increasingly as the voluntary health agencies and other organizations have become more active in advocacy and lobbying and have found common interests. The National Interagency Council on Smoking and Health, referred to earlier, was the first major antismoking coalition formed, but, as discussed, it did not engage in advocacy or lobbying. The National Interagency Council no longer is active, but a number of State interagency councils remain active (US DHHS 1986d).

The most prominent coalition today is the Coalition on Smoking OR Health, also discussed earlier. The apparent successes of this Coalition and the growth of the "nonsmokers' rights" movement have led to an increasing number of State-level coalitions formed to undertake a variety of public education and advocacy activities and to pass specific antismoking legislation. In addition, goals such as the achievement of a smoke-free society by the year 2000 have spurred the formation of additional coalitions aimed at advocacy and lobbying activity in support of these broad goals.

The resources represented by and available to these five groupings are difficult to estimate. The large voluntary and professional organizations have many thousands of members, but no data are available to determine what number are involved actively in advocacy or lobbying or what resources may be directed to those purposes. The smaller groups, such as ASH, have modest budgets and staffs, but collectively represent a significant number of volunteers and dues-paying supporters.

The Tobacco Lobby

In discussing the nature and scope of antismoking lobbying, it is important to consider the nature of the political environment in which this takes place. An influential component of this environment has been the "tobacco lobby." The lobbying activities of the tobacco lobby do not vary greatly from the activities of other groups on behalf of other interests or causes, groups with vested economic or political interests using a variety of approaches to influence the outcome of legislation (Pertschuk 1986).

The term "tobacco lobby" has been used throughout the past 25 years as a generic description of those interest groups whose political activities have been directed toward protecting tobacco and cigarette interests from adverse policies. The groups included most often in this description are: the cigarette manufacturers and other commercial firms involved in the manufacture, marketing, and sale of cigarettes; the Tobacco In-

stitute, the trade association representing the cigarette manufacturers; the tobacco farmers and those commercial firms involved in the trading of unmanufactured tobacco; and the registered lobbyists representing these various interests.

As in the case of antismoking advocacy and lobbying, there is little in the published literature on which to base a detailed analysis of the activities or impact of the tobacco lobby. It is difficult to determine the precise composition of the lobby at any point in time, and particularly at those points during which efforts of the lobby have been alleged to have had significant impact on the outcome of legislative or regulatory efforts to control smoking or the cigarette product. The available data indicate that since 1964, the cigarette manufacturers and the Tobacco Institute often have played the lead role in developing strategies and initiating lobbying against antismoking legislation and regulation.

The available historical record indicates that, unlike the voluntary health agencies, the tobacco lobby and its constituent members have engaged in active lobbying throughout the years. Among the legislative outcomes purportedly influenced by the tobacco lobby at the national level are the following: negotiating provisions of the Cigarette Labeling and Advertising Act of 1965 to ensure that the Federal Trade Commission would be precluded from regulating cigarette advertising for 3 1/2 years (1965); negotiating provisions of the Public Health Cigarette Smoking Act of 1969 to include preemption of State regulation of cigarette advertising (see Chapters 7 and 8; see also Friedman 1975; Fritschler 1975); and precluding the Consumer Product Safety Commission from exercising jurisdiction over cigarettes (1972). At the State level, influences attributed to the tobacco lobby relate to defeat of statewide nonsmokers' rights legislation in California on two separate occasions (1978, 1980; Whelan 1984). There are numerous anecdotal reports of tobacco lobby opposition to efforts to pass other State and local ordinances restricting smoking. It is difficult to establish the extent of the tobacco lobby's influence on these events, or to determine what combination of interest groups and individuals was involved.

Antismoking Advocacy and Lobbying: 1964 to the Present

Early Efforts

A succession of legislative and regulatory actions aimed at labeling the cigarette as dangerous and restricting the advertising and marketing practices of the cigarette manufacturers marked the period following the 1964 Surgeon General's Report. (See next chapter.) Throughout the period from 1964-69, the major national voluntary agencies provided extensive expert medical testimony in support of these initiatives but did not lobby actively for their passage. While the expert testimony contributed to the decision process, more aggressive advocacy and direct lobbying that supplemented these efforts undoubtedly influenced the process as well. One important example is the citizen petition that John F. Banzhaf III filed, as an individual, with the Federal Com-

munications Commission (FCC) contending that smoking should be subject to the Fairness Doctrine. This action led to the FCC ruling that the Fairness Doctrine applied to cigarette advertising. As a result, stations broadcasting cigarette commercials were required to donate time to antismoking messages (see Chapter 7).

In the process of pursuing this legal course, Banzhaf founded ASH as a legal action arm for the antismoking community and launched an ongoing series of legal challenges to advance smoking control policies. ASH played a major role in establishing the legal concept of the right of nonsmokers to be free from exposure to tobacco smoke. A major component of that effort was pressure brought to bear on the Federal Aviation Administration to require separate smoking and nonsmoking areas on commercial flights. Through these and other initiatives, which other organizations also supported, ASH introduced the principle of private legal activism to influence legislation and other decisions on smoking and health issues.

Nonsmokers' Rights

The specific origin of concerns about the health hazards to nonsmokers of exposure to environmental tobacco smoke is difficult to date. In 1971, ASH already had targeted restrictions on smoking on airliners and in public as major regulatory initiatives. Dr. Jesse Steinfeld, U.S. Surgeon General from 1969-73, called official attention to the hazards of ETS for the first time in the 1972 Surgeon General's Report (US DHEW 1972) and was outspoken throughout his public career on the need to protect nonsmokers.

During the mid-1970s, groups concerned about nonsmokers' exposure to environmental tobacco smoke began to appear around the United States. One of the largest, California GASP, was the forerunner of Americans for Nonsmokers' Rights, the principal national antismoking group devoted solely to clean indoor air legislation. California GASP was founded in 1976 as a nonprofit public interest group and became Californians for Nonsmokers' Rights (CNR) in 1978. That year, CNR succeeded in placing a statewide proposition on the California ballot seeking restrictions on smoking in public. Although defeated in a vote preceded by a well-funded campaign by the tobacco lobby (Wong 1978), this initiative set the stage for repeated and increasingly successful smoking ordinances at the community level in California and in other States and cities. As Americans for Nonsmokers' Rights, the group reports having assisted in the passage of scores of city and county ordinances (Americans for Nonsmokers' Rights 1988).

ALA also has played an important role in public education and advocacy on the issue of protecting nonsmokers. Due in large part to its strong interest in promoting clean air, ALA was the first of the three national voluntary health organizations to become involved in the nonsmokers' rights issue. In fact, ALA did so early in the 1970s with a campaign stressing the concept that nonsmokers objected to involuntary exposure to tobacco smoke.

As it evolved, the nonsmokers' rights issue introduced a new element in the growth of antismoking advocacy and lobbying: a basis for involving nonsmokers in activities other than encouraging smokers to quit or discouraging initiation among teenagers.

Resulting initiatives provided a new rallying point outside the traditional focus of the voluntary health agencies and at the same time appealed to and prompted greater activity among those groups.

The effect of this element in the smoking control movement has yet to be fully evaluated. Surveys of public attitudes about smoking and the need to restrict it to protect nonsmokers show a widespread acceptance of these principles and an increasing consensus that the social acceptability of smoking is declining (Chapter 4).

Coalition Building and the Growth of Advocacy

As mentioned previously, ACS, AHA, and ALA in 1982 formed a tripartite Coalition on Smoking OR Health, primarily to coordinate their Federal legislative activities related to smoking control. The creation of the Coalition came at the end of a long period of gradual expansion in the public policy activities of the three voluntary organizations. The National Commission on Smoking and Public Policy, a study group ACS established in 1976, added impetus to the concept of the Coalition by recommending the three voluntary health agencies do more to support public policy initiatives to control smoking (ACS 1978). The Coalition has served as a mechanism for coordinating and implementing lobbying efforts of the three agencies. At the time the Coalition was established, ACS, AHA, and ALA also increased the staffs and resources of their individual public policy components.

Through the Coalition, the three voluntary health agencies have worked with other organizations and coalitions with common interests in support of smoking control policies, relating to health warning labels, tobacco advertising, smoking on airlines, the tobacco excise tax, and the price support program. Successful antismoking efforts the Coalition supported have included: passage of the Comprehensive Smoking Education Act of 1984, which requires four rotating warning labels on cigarette packages and advertisements, as well as disclosure to the Secretary of Health and Human Services of additives used in the manufacture of cigarettes; passage of the Comprehensive Smokeless Tobacco Health Education Act of 1986, banning advertising for smokeless tobacco in the electronic media and requiring warning labels on packages and advertisements; permanent extension of the Federal excise tax at 16 cents per pack as a provision of the Consolidated Omnibus Budget Reconciliation Act of 1985 (Public Law 99-272); and banning of smoking on commercial domestic airline flights scheduled for flight time of 2 hr or less as part of the fiscal year 1988 Department of Transportation appropriations bill (see Chapter 7). One analyst has concluded that the Coalition has enabled the three national voluntary health agencies to take the initiative in a variety of areas, placing the tobacco lobby in a reactive posture (Pertschuk 1986).

Other factors that have accompanied the Coalition's efforts are believed to have contributed to the Coalition's success and to an apparent steady increase in the level of antismoking advocacy and lobbying throughout the United States. One of these factors is the recruitment of new allies and the energizing of old ones. In addition to the Coalition, other groups and organizations have taken more aggressive positions. For example, the American Council on Science and Health has been an aggressive advocate on all aspects of smoking control. Another example is the American Medical Associa-

tion, which has become involved in a major effort to mobilize its members at the State and local levels, in addition to using its considerable influence in Washington, in support of antismoking legislation (Lundberg 1985; AMA Council on Scientific Affairs 1984; American Medical Association 1987).

Another important factor is the growth in knowledge and sophistication of the advocates and lobbyists themselves. Drawing on the experience and expertise of other public interest groups, the antismoking interests have become significantly more proficient at employing their resources. In addition, through its Smoking Control Advocacy Resource Center, the Advocacy Institute, a public interest advocacy strategy and skills training resource, has contributed new thinking and coordination to the effort to counter the influence of the tobacco lobby (Advocacy Institute 1987a, 1987b).

One of the most important aspects of the growth of antismoking advocacy and lobbying has been the increase in State and local activity. The creation of coalitions and the success of local antismoking ordinances appear to have encouraged more groups and individuals to become politically active. Surveys and studies of trends in local and State smoking control ordinances (US DHHS 1986d) indicate that the restrictiveness of those ordinances is increasing, as is public support. (See also Chapter 7.)

CONCLUSIONS

Part I. Smoking Prevention Activities

1. Diverse program approaches to the prevention of smoking among youth grew out of antismoking education efforts in the 1960s. These approaches include media-based programs and resources; smoking prevention as part of multicomponent school health education; psychosocial prevention curricula; and a variety of other resources developed and sponsored by professional and voluntary health organizations, Federal and State agencies, and schools and community groups.
2. Psychosocial curricula addressing youths' motivations for smoking and the skills they need to resist influences to smoke have emerged as the program approach with the most positive outcomes. Evolution in program content has been accompanied by a shift since the 1960s in prevention program focus from youths in high school and college to adolescents in grades 6 through 8.
3. Existing prevention programs vary greatly in the extent to which they have been evaluated and used. Psychosocial prevention curricula have been intensively developed over the last decade and have been the most thoroughly evaluated and best documented; however, they are generally not part of a dissemination system. More widely disseminated smoking prevention materials and programs, such as those using mass media and brochures, have not always been as thoroughly evaluated; however, they have achieved wider use in the field.
4. The model of stages of smoking behavior acquisition underlies current smoking prevention programs and suggests new intervention opportunities, ranging from prevention activities aimed at young children to cessation programs for adolescent smokers.

5. There has been and continues to be a lack of smoking prevention programs that target youth at higher risk for smoking, such as those from lower socioeconomic backgrounds or school dropouts.

Part II. Smoking Education and Cessation Activities

1. During the past 25 years, national voluntary health agencies, especially the American Cancer Society, the American Heart Association, and the American Lung Association, have played a significant role in educating the public about the hazards of tobacco use.
2. Individual and group smoking cessation programs evolved from an emphasis on conditioning-based approaches in the 1960s to the cognitively based self-management procedures of the 1970s to the relapse prevention and pharmacologically based components of the 1980s.
3. There has recently been an increased emphasis on targeting specific groups of smokers for cessation activities (e.g., pregnant women, Hispanics, blacks).
4. Packaging and marketing of self-help smoking cessation materials have become more sophisticated and there is more of an emphasis on relapse prevention, while much of the content has changed relatively little over the years.
5. Mass-mediated quit-smoking programs have become an increasingly popular strategy for influencing the smoking behavior of a large number of smokers.
6. The 1980s have seen an increase in the promotion of smoking control efforts in the workplace in response to increasing demand and opportunity for worksite wellness programs and smoking control policies.
7. In the last decade there has been an increasing interest in involving physicians and other health care professionals in smoking control efforts. Medical organizations have played a more prominent role in smoking and health during the 1980s than they had in the past.

Part III. Antismoking Advocacy and Lobbying

1. Lobbying and advocacy efforts have expanded through the increasing commitment of the national voluntary health agencies to political action and the formation of coalitions at the local, State, and national levels.
2. Antismoking advocacy and lobbying have evolved over the past 25 years and now focus on a growing number of local, State, and national legislative and regulatory initiatives designed to reduce smoking, regulate the cigarette product, and prevent the uptake of smoking by children and adolescents.

References

ACTION ON SMOKING AND HEALTH. *History of the War Against Smoking: 1964-1978.* Washington, D.C.: Action on Smoking and Health, 1978.

ADVOCACY INSTITUTE. *Smoke Fighting. A Smoking Control Movement Building Guide.* New York: American Cancer Society, 1987a.

ADVOCACY INSTITUTE. *Smoke Signals. The Smoking Control Media Handbook.* New York: American Cancer Society, 1987b.

ALEXANDER, H.M., CALLCOTT, R., DOBSON, A.J., HARDES, G.R., LLOYD, D.M., O'CONNELL, D.L., LEEDER, S.R. Cigarette smoking and drug use in schoolchildren: IV--Factors associated with changes in smoking behaviour. *lnternational Journa1 of Epidemiology* 12(1):59-66, 1983.

AMERICAN ACADEMY OF FAMILY PHYSICIANS. *AAFP Stop Smoking Program. Patient Stop Smoking Guide.* Kansas City, Kansas: American Academy of Family Physicians, 1987.

AMERICAN ACADEMY OF PEDIATRICS. Tobacco use by children and adolescents. *Pediatrics* 79(3):479-481, March 1987.

AMERICAN CANCER SOCIETY. *Task Force on Tobacco and Cancer: Target 5.* Report to the Board of Directors of the American Cancer Society. New York: American Cancer Society, October 1976.

AMERICAN CANCER SOCIETY. *A National Dilemma: Cigarette Smoking or the Health of Americans.* Report of the National Commission on Smoking and Public Policy to the Board of Directors. New York: American Cancer Society, January 31, 1978.

AMERICAN CANCER SOCIETY. *Facilitator's Guide: Youth Smoking Cessation Clinic.* New York: American Cancer Society, 1980.

AMERICAN CANCER SOCIETY. *Breaking Free. Discussion Guide.* New York: American Cancer Society, 1986.

AMERICAN CANCER SOCIETY. *Summary of Federal Legislative Activities.* New York: American Cancer Society, 1988.

AMERICAN COLLEGE OF CHEST PHYSICIANS. Proceedings of the national forum on office management of smoking problems. *Chest* 54:169, 1968.

AMERICAN COLLEGE OF CHEST PHYSICIANS. The management of smoking in the physician's "workshop." *Chest* 82:359-361, September 1982.

AMERICAN HEART ASSOCIATION. *Children and Smoking: A Message to Parents.* Dallas: American Heart Association, 1987.

AMERICAN INSTITUTES FOR RESEARCH. *Smokescreen. Guidelines for Helping Teenagers Become Nonsmokers.* Prepared for the Bureau of Health Education, Centers for Disease Control. Palo Alto, California: American Institutes for Research, 1980.

AMERICAN MEDICAL ASSOCIATION. *Tobacco and Health.* Report compiled by the AMA-ERF Committee for Research on Tobacco and Health. Chicago: American Medical Association and Research Foundation, 1978.

AMERICAN MEDICAL ASSOCIATION. *Creating a Tobacco-Free Society: A Physician Leadership Kit.* Chicago: American Medical Association, 1987.

AMERICAN MEDICAL ASSOCIATION BOARD OF TRUSTEES. Media advertising for tobacco products. *Journal of the American Medical Association* 255(8):1033, February 28, 1986.

AMERICAN MEDICAL ASSOCIATION COUNCIL ON SCIENTIFIC AFFAIRS. Nonsmoking in hospitals. *Connecticut Medicine* 48(5):297-305, May 1984.

AMERICAN NONSMOKERS' RIGHTS FOUNDATION. *A Curriculum for Secondhand Smoke.* Berkeley, California: American Nonsmokers' Rights Foundation, 1986.

ANDA, R.F., REMINGTON, P.L., SIENKO, D.G., DAVIS, R.M. Are physicians advising smokers to quit? The patient's perspective. *Journal of the American Medical Association* 257(14):1916-1919, April 10, 1987.

ANDERSON, D.R., JOSE, W.S. II. Employee lifestyle and the bottom line: Results from the Stay Well evaluation. *Fitness in Business*, December 1987, pp. 86-91.

ARKIN, R.M., ROEMHILD, H.F., JOHNSON, C.A., LUEPKER, R.V., MURRAY, D.M. The Minnesota Smoking Prevention Program: A seventh-grade health curriculum supplement. *Journal of School Health* 51(9):611-616, November 1981.

AXELSSON, A., BRANTMARK, B. The antismoking effect of chewing gum with nicotine of high and low bioavailability. In: Steinfeld, J., Griffiths, W., Ball, K., Taylor, R.M. (eds.) *Smoking and Health. II. Health Consequences, Education, Cessation Activities, and Governmental Action.* Proceedings of the 3rd World Conference on Smoking and Health. U.S. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, National Cancer Institute. DHEW Publication No. (NIH) 77-1413, 1977, pp. 549-559.

BAILEY, B.J. Tobaccoism is the disease--Cancer is the sequela. *Journal of the American Medical Association* 255(14):1923, April 11, 1986.

BAILEY, W.J. Ten smoking education programs for schools. *Journal of School Health* 55(1):33-34, January 1985.

BAILEY, W.J. Minneapolis workshop kicks-off national campaign for a tobacco-free young America by the year 2000. *Tobacco-Free Young America Reporter* 4(2):1, 1987.

BASCH, C.E., EVELAND, J.D., PORTNOY, B. Diffusion systems for education and learning about health. *Family and Community Health* 9(2):1-26, 1986.

BASCH, C.E., SLIEPCEVICH, E.M. Innovators, innovations and implementation: A framework for curricular research in school health education. *Health Education* 14(2):20-24, March-April 1983.

BAUMAN, K.E., BROWN, J.D., BRYAN, E.S., FISHER, L.A., PADGETT, C.A., SWEENEY, J.M. Three mass media campaigns to prevent adolescent cigarette smoking. *Preventive Medicine* 17:510-530, 1988.

BELL, C.S., BATTJES, R. (eds.) *Prevention Research: Deterring Drug Abuse Among Children and Adolescents*, NIDA Research Monograph 63. U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHHS Publication No. (ADM) 85-1334, 1985.

BELL, C.S., LEVY, S.M. Public policy and smoking prevention: Implications for research. In: Matarazzo, J.D., Weiss, S.M., Herd, J.A., Miller, N.E., Weiss, S.M. (eds.) *Behavioral Health. A Handbook of Health Enhancement and Disease Prevention.* New York: John Wiley and Sons, 1984, pp. 775-785.

BENNETT, G., AUSTIN, D., JANIZEWSKI, R. Save a sweet heart: A smoking intervention in senior high school. Paper presented at 114th annual meeting of American Public Health Association, Las Vegas, September 29, 1986.

BENOWITZ, N.L., JACOB, P. III., SAVANAPRIDI, C. Determinants of nicotine intakes while chewing nicotine polacrilex gum. *Clinical Pharmacology and Therapeutics* 41:467-473, 1987.

BEST, J.A., FLAY, B.R., TOWSON, S.M.J., RYAN, K.B., PERRY, C.L., BROWN, K.S., KERSELL, M.W., D'AVERNAS, J.R. Smoking prevention and the concept of risk. *Journal of Applied Social Psychology* 14(3):257-273, 1984.

BEST, J.A., THOMSON, S.J., SANTI, S.M., SMITH, E.A., BROWN, K.S. Preventing cigarette smoking among school children. *Annual Review of Public Health* 9:161-201, 1988.

BIGLAN, A., ARY, D.V. Methodological issues in research on smoking prevention. In: Bell, C.S., Battjes, R. (eds.) *Prevention Research: Deterring Drug Abuse Among Children and*

Adolescents, NIDA Research Monograph 63. U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHHS Publication No. (ADM) 85-1334, 1985, pp. 170-195.

BIGLAN, A., SEVERSON, H., ARY, D., FALLER, C., GALLISON, C., THOMPSON, R., GLASGOW, R., LICHTENSTEIN, E. Do smoking prevention programs really work? Attrition and the internal and external validity of an evaluation of a refusal skills training program. *Journal of Behavioral Medicine* 10(2):159-171, 1987.

BLAKE, G.H. Smoking and the military. *New York State Journal of Medicine* 85(7):354-355, 1985.

BLUM, A. DOC--Counter advertising has impact. Physicians group launches innovative prevention campaign. *Focus on Alcohol and Drug Issues* 2:22-24, 1979.

BLUM, A. Medicine vs. Madison Avenue. Fighting smoke with smoke. *Journal of the American Medical Association* 243(8):739-740, February 22-29, 1980.

BLUM, A. Strategies to reduce cigarette sales. Excise taxes and beyond. *Journal of the American Medical Association* 255(8):1049-1050, February 28, 1986.

BOTVIN, G.J., ENG, A., WILLIAMS, C.L. Preventing the onset of cigarette smoking through life skills training. *Preventive Medicine* 9:135-143, 1980.

BOTVIN, G.J., RENICK, N.L., BAKER, E. The effects of scheduling format and booster sessions on a broad-spectrum psychosocial approach to smoking prevention. *Journal of Behavioral Medicine* 6(4):359-379, 1983.

BOTVIN, G.J., WILLS, T.A. Personal and social skills training: Cognitive-behavioral approaches to substance abuse prevention. In: Bell, C.S., Battjes, R. (eds.) *Prevention Research: Deterring Drug Abuse Among Children and Adolescents,* NIDA Research Monograph 63. U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHHS Publication No. (ADM) 85-1334, 1985, pp. 8-49.

BRAY, R.M., MARSDEN, M.E., GUESS, L.L., WHEELESS, S.C., PATE, D., DUNTEMAN, G.H., IANNACCHIONE, V.G. *1985 Worldwide Survey of Alcohol and Nonmedical Drug Use Among Military Personnel.* North Carolina: Research Triangle Institute, June 1986.

BRITISH THORACIC SOCIETY. Comparison of four methods of smoking withdrawal in patients with smoking related diseases. *British Medical Journal* 286(6366):595-597, February 19, 1983.

BUREAU OF NATIONAL AFFAIRS. *Where There's Smoke: Problems and Policies Concerning Smoking in the Workplace,* Second Edition. Washington, D.C.: Bureau of National Affairs, 1987.

BURNEY, L.E. Smoking and lung cancer. A statement of the Public Health Service. *Journal of the American Medical Association* 171(13):1829-1837, November 28, 1959.

CALIFORNIA NONSMOKERS' RIGHTS FOUNDATION. *A Curriculum for Death in the West.* Berkeley, California: California Nonsmokers' Rights Foundation, 1983.

CAMPBELL, I.A., LYONS, E., PRESCOTT, R.J. Stopping smoking. Do nicotine chewing-gum and postal encouragement add to doctors' advice. *Practitioner* 231:114-117, January 8, 1987.

CENTERS FOR DISEASE CONTROL. Survey of chronic disease activities in State and territorial health agencies. *Morbidity and Mortality Weekly Report* 36(34):565-568, September 4, 1987.

CHAPMAN, S. Stop smoking clinics: A case for their abandonment. *Lancer* 1(8434):918-920, April 20, 1985.

CHASSIN, L., PRESSON, C.C., SHERMAN, S.J. Cognitive and social influence factors in adolescent smoking cessation. *Addictive Behaviors* 9:383-390, 1984.

CHASSIN, L., PRESSON, C.C., SHERMAN, S.J., MCGREW, J. The changing smoking environment for middle and high school students: 1980-1983. *Journal of Behavioral Medicine* 10(6):581-593, 1987.

CHASSIN, L.A., PRESSON, C.C., SHERMAN, S.J. Stepping backward in order to step forward: An acquisition-oriented approach to primary prevention. *Journal of Consulting and Clinical Psychology* 53(5):612-622, 1985.

CLARKE, J.H., MACPHERSON, B., HOLMES, D.R., JONES, R. Reducing adolescent smoking: A comparison of peer-led, teacher-led, and expert interventions. *Journal of School Health* 56(3):102-106, March 1986.

CLEARY, P.D., HITCHCOCK, J.L., SEMMER, N., FLINCHBAUGH, L.J., PINNEY, J.M. Adolescent smoking: Research and health policy. *Milbank Quarterly* 66(1):137-171, 1988.

COHEN, S.B. Should medical associations discourage smoking? *Journal of the American Medical Association* 239(29):2158, May 19, 1978.

COHEN, S.J., CHRISTEN, A.G., KATZ, B.P., DROOK, C.A., DAVIS, B.J., SMITH, D.M., STOOKEY, G.K. Counseling medical and dental patients about cigarette smoking: The impact of nicotine gum and chart reminders. *American Journal of Public Health* 77(3):313-316, 1987.

CONNELL, D.B., TURNER, R.R. The impact of instructional experience and the effects of cumulative instruction. *Journal of School Health* 55(8):324-331, 1985.

CONNELL, D.B., TURNER, R.R., MASON, E.F. Summary of findings of the School Health Education Evaluation: Health promotion effectiveness, implementation and costs. *Journal of School Health* 55(8):316-321, 1985a.

COYE, M.J. Preventing tobacco dependence: The New Jersey Commission on Smoking or Health. *New Jersey Medicine* 85(2):151-155, February 1988.

CULLEN, J.W. Design of cancer prevention studies. *Cancer Detection and Prevention* 9: 125-138, 1986.

CULLEN, J.W., MCKENNA, J.W., MASSEY, M.M. International control of smoking and the US experience. *Chest* 89(4, Supplement):206S-218S, April 1986.

CUMMINGS, K.M., EMONT, S.L., JAEN, C., SCIANDRA, R. Format and quitting instructions as factors influencing the impact of a self-administered quit smoking program. *Health Education Quarterly* 15(2):199-216, Summer 1988.

CUMMINGS, K.M., HELLMANN, R., EMONT, S.L. Correlates of participation in a worksite stop-smoking contest. *Journal of Behavioral Medicine* 11(3):267-277, 1988.

DANAHER, B.G. Smoking cessation programs in occupational settings. *Public Health Reports* 95(2):149-157, March-April, 1980.

DAVIS, A.L., FAUST, R., ORDENTLICH, M. Self-help smoking cessation and maintenance programs: A comparative study with 12-month follow-up by the American Lung Association. *American Journal of Public Health* 74:1212-1217, 1984.

DAVIS, R.L. Positive smoking education programs for the school-age child. In: Steinfeld, J., Griffiths, W., Ball. K., Taylor, R.M. (eds.) *Smoking and Health. II. Health Consequences, Education, Cessation Activities, and Governmental Action.* Proceedings of the 3rd World Conference on Smoking and Health. U.S. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, National Cancer Institute. DHEW Publication No. (NIH) 77-1413, 1977, pp. 237-244.

DAVIS, R.M. Health education on the six-o'clock news: Motivating television coverage of news in medicine. *Journal of the American Medical Association* 259(7):1036-1038, February 19, 1988a.

DAVIS, R.M. Uniting physicians against smoking: The need for a coordinated national strategy. *Journal of the American Medical Association* 259(19):2900-2901, May 20, 1988b.

DAWLEY, H.H. JR., FINKEL, C. The Great American Smokeout: A follow-up report. *Addictive Behaviors* 6(2):153-154, 1981.

DIEHL, H.S. *Tobacco and Your Health: The Smoking Controversy*. New York: McGraw-Hill, 1969.

DIELMAN, T.E., LORENGER, A.T., LEECH, S.L., LYONS, A.L., KLOS, D.M., HORVATH, W.J. Fifteen-month follow-up results of an elementary school based smoking prevention project. *Hygiene* 4(4):28-35, 1985.

DILLOW, G.L. The hundred-year war against the cigarette. *American Heritage*, February-March, 1981, pp. 3-15.

DORSEY, J.L. Control of the tobacco habit. *Annals of Internal Medicine* 10:628-631, 1936.

DOYLE, J.T., DAWBER, T.R., KANNEL, W.B., KINCH, S.H., KAHN, H.A. The relationship of cigarette smoking to coronary heart disease. *Journal of the American Medical Association* 190(10):108-112, December 7, 1964.

EMMONS, K.M., EMONT, S.L., COLLINS, R.L., WEIDNER, G. Relapse prevention versus broad spectrum treatment for smoking cessation: A comparison of efficacy. *Journal of Substance Abuse* 1(1):79-89, 1988.

ERSHLER, J., LEVENTHAL, H., FLEMING, R., GLYNN, K. The quitting experience for smokers in sixth through twelfth grade. *Addictive Behaviors*, in press.

EVANS, R.I. Smoking in children: Developing a social psychological strategy of deterrence. *Preventive Medicine* 5:122-127, 1976.

EVANS, R.I. A social inoculation strategy to deter smoking in adolescents. In: Matarazzo, J.D., Weiss, S.M., Herd, J.A., Miller, N.E., Weiss, S.M. (eds.) *Behavioral Health: Handbook of Health Enhancement and Disease Prevention*. New York: John Wiley and Sons, 1984, pp. 765-774.

EVANS, R.I., HENDERSON, A.H., HILL, P.C., RAINES, B.E. Current psychological, social, and educational programs in the control and prevention of smoking: A critical methodological review. *Atherosclerosis Review* 6:203-245, 1979.

EVANS, R.I., ROZELLE, R.M., MAXWELL, S.E., RAINES, B.E., DILL, C.A., GUTHRIE, T.J., HENDERSON, A.H., HILL, P.C. Social modeling films to deter smoking in adolescents: Results of a three-year field investigation. *Journal of Applied Psychology* 66(4):399-414, 1981.

FAGERSTROM, K.-O. A comparison of psychological and pharmacological treatment in smoking cessation. *Journal of Behavioral Medicine* 5(3):343-351, 1982.

FANNING, O. Prevention efforts shift from passive to active. *Oncology and Biotechnology News* 2(4):2, 1988.

FEE, W.M., STEWART, M.J. A controlled trial of nicotine chewing gum in a smoking withdrawal clinic. *Practitioner* 226(1363):148, 151, January 1982.

FERNOE, O., LICHTNECKERT, S.J.A., LUNDGREN, C.E.G. A substitute for tobacco smoking. *Psychopharmacologia* 31(3):201-204, 1973.

FIORE, M., NOVOTNY, T., LYNN, W., MAKLAN, D., DAVIS, R. Smoking cessation: Data from the 1986 Adult Use of Tobacco Survey. In: Aoki, M., Hisamichi, S., Tominaga, S. (eds.) *Smoking and Health 1987*. Proceedings of the 6th World Conference on Smoking and Health, Tokyo, November 9-12, 1987. Amsterdam: Excerpta Medica, 1988, pp. 189-194.

FLAY, B.R. Psychosocial approaches to smoking prevention: A review of findings. *Health Psychology* 4(5):449-488, 1985a.

FLAY, B.R. What we know about the social influences approach to smoking prevention: Review and recommendations. In: Bell, C.S., Battjes, R. (eds.) *Prevention Research: Deterring Drug Abuse Among Children and Adolescents*, NIDA Research Monograph 63. US. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and

Mental Health Administration, National Institute on Drug Abuse. DHHS Publication No. (ADM) 85-1334, 1985b, pp. 67-112.

FLAY, B.R. Mass media linkages with school-based programs for drug abuse prevention. *Journal of School Health* 56(9):402-406, November 1986.

FLAY, B.R. Mass media and smoking cessation: A critical review. *American Journal of Public Health* 77(2):153-160, February 1987a.

FLAY, B.R. *Selling the Smokeless Society: 56 Evaluated Mass Media Programs and Campaigns Worldwide.* Washington, DC.: American Public Health Association, 1987b.

FLAY, B.R., BRANNON, B.R., JOHNSON, C.A., HANSEN, W.B., ULENE, A.L., WHITNEY-SALTIEL, D.A., GLEASON, L.R., SUSSMAN, S., GAVIN, M.D., GLOWACZ, K.M., SOBOL, D.F., SPIEGEL, D.C. The Television School and Family Smoking Prevention and Cessation Project. I. Theoretical basis and program development. *Preventive Medicine* 17:585-607, 1988.

FLAY, B.R., D'AVERNAS, J.R., BEST, J.A., KERSELL, M.W., RYAN, K.B. Cigarette smoking: Why young people do it and ways of preventing it. In: McGrath, P., Firestone, P. (eds.) *Pediatric and Adolescent Behavioral Medicine*, Volume 10. New York: Springer Publishing, 1983, pp. 132-183.

FLAY, B.R., HANSEN, W.B., JOHNSON, C.A., COLLINS, L.M., DENT, C.W., DWYER, K.M., GROSSMAN, L., HOCKSTEIN, G., RAUCH, J., SOBEL, J.L., SOBOL, D.F., SUSSMAN, S., ULENE, A. Implementation effectiveness trial of a social influences smoking prevention program using schools and television. *Health Education Research* 2(4):385-400, 1987.

FLAY, B.R., RYAN, K.B., BEST, J.A., BROWN, K.S., KERSELL, M.W., D'AVERNAS, J.R., ZANNA, M.P. Are social-psychological smoking prevention programs effective? The Waterloo Study. *Journal of Behavioral Medicine* 8(1):37-59, March 1985.

FLAY, B.R., SOBEL, J.L. The role of mass media in preventing adolescent substance abuse. In: Glynn, T.J., Leukefeld, C.G., Ludford, J.P. (eds.) *Preventing Adolescent Drug Abuse: Intervention Strategies*, NIDA Research Monograph 47. U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHHS Publication No. (ADM) 85-1280, 1983, pp. 5-35.

FLAY, B.R., THOMPSON, S., SANTI, S., BEST, J.A., BROWN, S.K. Long-term follow-up of the Waterloo Smoking Prevention Trial. Paper presented at the 6th World Conference on Smoking and Health, Tokyo, November 9-12, 1987.

FOOD AND DRUG ADMINISTRATION. Letter from Mark Novitch for Jere E. Glyan, Commissioner of Food and Drugs, to John F. Banzhaf III and Peter N. Georgiades, Action on Smoking and Health, November 25, 1980 (Docket Nos. 77P-0185 and 78P-0338/CP).

FOOD AND DRUG ADMINISTRATION. Smoking deterrent drug products for over-the-counter human use; establishment of a monograph. *Federal Register* 47:490-500, January 5, 1982.

FOOD AND DRUG ADMINISTRATION. Smoking deterrent drug products for over-the-counter human use; tentative final monograph. *Federal Register* 50:27552-27557, July 3, 1985.

FREDERIKSEN, L.W., PRUE, D.M., ORLANDI, M.A., EDELMAN, B.R., WYNDER, E.L. *Development of a Computer Assisted Smoking Treatment Program: A Preliminary Report.* Cambridge, Massachusetts: Institute for the Study of Smoking Behavior and Policy, John F. Kennedy School of Government, Harvard University, February 1988.

FRIEDMAN, K.M. *Public Policy and the Smoking-Health Controversy. A Comparative Study.* Lexington, Massachusetts: D.C. Heath, 1975.

FRITSCHLER, A.L. *Smoking and Politics: Policymaking and the Federal Bureaucracy*, Second Edition. Englewood Cliffs, New Jersey: Prentice-Hall, 1975.

FULLER, J.A. Smoking withdrawal and acupuncture. *Medical Journal of Australia* 1:28-29, 1982.

GARDNER, J.W. *In Common Cause. New* York: W.W. Norton, 1973.

GARFINKEL, L., STELLMAN, S.D. Cigarette smoking among physicians, dentists, and nurses. *CA--A Cancer Journal for Clinicians* 36(1):2-8, January-February 1986.

GILCHRIST, L.D., SCHINKE, S.P. Improving smoking prevention programs. *Journal of Psychosocial Oncology* 3(1):67-78, Spring 1985.

GILCHRIST, L.D., SCHINKE, S.P., NURIUS, P. Reducing initiation of habitual smoking among women. *Preventive Medicine*, in press.

GLASGOW, R.E., LICHTENSTEIN, E. Long-term effects of behavioral smoking cessation interventions. *Behavior Therapy* 18:297-324, 1987.

GLASGOW, R.E., ROSEN, G.M. Behavioral bibliotherapy: A review of self-help behavior therapy manuals. *Psychological Bulletin* 85(1):1-23, January 1978.

GLASSMAN, A.H., JACKSON, W.K., WALSH, B.T., ROOSE, S.P., ROSENFELD, B. Cigarette craving, smoking withdrawal, and clonidine. *Science* 226:864-866, November 16, 1984.

GLASSMAN, A.H., STETNER, F., WALSH, T., RAIZMAN, P.S., FLEISS, J.L., COOPER, T.B., COVEY, L.S. Heavy smokers, smoking cessation, and clonidine: Results of a double-blind, randomized trial. *Journal of the American Medical Association* 259(19):2863-2866, May 20, 1988.

GLOVER, E.D. Conducting smokeless tobacco cessation clinics. *American Journal of Public Health* 76(2):207, 1986.

GLYNN, K., LEVENTHAL, H., HIRSCHMAN, R. A cognitive developmental approach to smoking prevention. In: Bell, C.S., Battjes, R. (eds.) *Prevention Research: Deterring Drug Abuse Among Children and Adolescents*, NIDA Research Monograph 63. U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHHS Publication No. (ADM) 85-1334, 1985, pp. 130-152.

GLYNN, T.J. Essential elements of school-based smoking prevention programs: Research results. *Journal of School Health*, in press.

GORI, G.B., LYNCH, C.J. Toward less hazardous cigarettes. *Journal of the American Medical Association* 240(12):1255-1259, September 15, 1978.

GREEN, L.W., GREEN, P.F. Intervening in social systems to make smoking education more effective. In: Steinfeld, J., Griffiths, W., Ball, K., Taylor, R.M. (eds.) *Smoking and Health. II. Health Consequences, Education, Cessation Activities, and Governmental Action.* Proceedings of the 3rd World Conference on Smoking and Health. U.S. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, National Cancer Institute. DHEW Publication No. (NIH) 77-1413, 1977, pp. 393-401.

GRITZ E., CARR, C.R., MARCUS, A.C. Unaided smoking cessation: Great American Smokeout and New Year's Day quitters. *Journal of Psychosocial Oncology*, in press.

GRITZ, E.R. Gender and the teenage smoker. In: Ray, B.A., Braude, M.C. (eds.) *Women and Drugs: A New Era for Research*, NIDA Research Monograph 65. U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHHS Publication No. (ADM) 86-1447, 1986, pp. 70-79.

HALL, R.G., SACHS, D.P.L., HALL, S.M., BENOWITZ, N.L. Two-year efficacy and safety of rapid smoking therapy in patients with cardiac and pulmonary disease. *Journal of Consulting and Clinical Psychology* 52(4):574-581, 1984a.

HALL, S.M., RUGG, D., TUNSTALL, C., JONES, R.T. Preventing relapse to cigarette smoking by behavioral skill training. *Journal of Consulting and Clinical Psychology* 52:373-382, 1984b.

HALL, S.M., TUNSTALL, C.D., GINSBERG, D., BENOWITZ, N.L., JONES, R.T. Nicotine gum and behavioral treatment: A placebo controlled trial. *Journal of Consulting and Clinical Psychology* 55(4):6036-605, 1987.

HAMILTON, J.L; The demand for cigarettes: Advertising, the health scare, and the cigarette advertising ban. *Review of Economics and Statistics* 54:401-411, November 1972.

HAMM, AC. Massive antismoking intervention trial to begin in the fall. *Journal of the National Cancer Institute* 80(10):717-718, July 20, 1988.

HAMMOND, EC., HORN, D. Smoking and death rates--Report on forty-four months of follow-up of 187,783 men. I. Total mortality. *Journal of the American Medical Association* 166(10):1159-1172, March 8, 1958.

HANSEN, W.B. Behavioral predictors of abstinence: Early indicators of a dependence on tobacco among adolescents. *International Journal of the Addictions* 18(7):913-920, 1983.

HANSEN, W.B., COLLINS, L.M., JOHNSON, C.A., GRAHAM, J.W. Self-initiated smoking cessation among high school students. *Addictive Behaviors* 10:265-271, 1985.

HARVEY, L., SHUBAT, S. Public opinion on health issues. In: *AMA Surveys of Physician and Public Opinion on Health Care Issues, 1987.* Chicago: American Medical Association, April 1987.

HERBOLD, J.R. Smoking habits of U.S. military personnel. *Military Medicine* 152(4):194-195, April 1987.

HJALMARSON, A.I.M. Effect of nicotine gum in smoking cessation. A randomized, placebo-controlled, double-blind study. *Journal of the American Medical Association* 252(20):2835-2838, November 23-30, 1984.

HOPS, H., WEISSMAN, W., BIGLAN, A., THOMPSON, R., FALLER, C., SEVERSON, H.H. A taped situation test of cigarette refusal skill among adolescents. *Behavioral Assessment* 8:145-154, 1986.

HUGHES, G.H., HYMOWITZ, N., OCKENE, J.K., SIMON, N., VOGT, T.M. The Multiple Risk Factor Intervention Trial (MRFIT). V. Intervention on smoking. *Preventive Medicine* 10(4):476-500, July 1981.

HUGHES, J.R., MILLER, S.A. Nicotine gum to help stop smoking. *Journal of the American Medical Association* 252(20):2855-2858, November 23-30, 1984.

HULBERT, J. Cessation among youth: Experiences in selected secondary schools in Iowa. In: Schwartz, J.L. (ed.) *Proceedings of International Conference on Smoking Cessation.* New York: American Cancer Society, 1978, pp. 335-337.

HUNT, W.A., BESPALEC, D.A. An evaluation of current methods of modifying smoking behavior. *Journal of Clinical Psychology* 30:431-438, 1973.

HURD, P.D., JOHNSON, C.A., PECHACEK, T., BAST, L.P., JACOBS, D.R., LUEPKER, R.V. Prevention of cigarette smoking in seventh grade students. *Journal of Behavioral Medicine 3(1):15-28, 1980.*

IGLEHART, J.K. The campaign against smoking gains momentum. *New England Journal of Medicine* 314(16):1059-1064, April 17, 1986.

IMS. Nicorette. *New Products Digest,* August 1984.

INSTITUTE FOR THE STUDY OF SMOKING BEHAVIOR AND POLICY. *The Policy Implications of the* 1986 *Surgeon General's Report on Involuntary Smoking.* Cambridge, Massachusetts: Institute for the Study of Smoking Behavior and Policy, John F. Kennedy School of Government, Harvard University, 1988.

IVERSON, D.C., KOLBE, L.J. Evolution of the national disease prevention and health promotion strategy: Establishing a role for the schools. *Journal of School Health* 53(5):294-302, May 1983.

JAMROZIK, K., FOWLER, G., VESSEY, M., WALD, N. Placebo controlled trial of nicotine chewing gum in general practice. *British Medical Journal* 289(6448):794-797, 1984.

JARVIK, M.E., CULLEN, J.W., GRITZ, E.R., VOGT, T.M., WEST, L.J. (eds.) *Research on Smoking Behavior*, NIDA Research Monograph 17. U.S. Department of Health, Education, and Welfare, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHEW Publication No. (ADM) 78-581, December 1977.

JARVIS, M.J., RAW, M., RUSSELL, M.A.H., FEYERABEND, C. Randomised controlled trial of nicotine chewing-gum. *British Medical Journal* 285(6341):537-540, December 21, 1982.

JASON, L.A., MOLLICA, M., FERRONE, L. Evaluating an early secondary smoking prevention intervention. *Preventive Medicine* 11:96-102, 1982.

JOHNSON, C.A., HANSEN, W.B., COLLINS, L.M., GRAHAM, J.W. High-school smoking prevention: Results of a three-year longitudinal study. *Journal of Behavioral Medicine* 9(5): 439-452, 1986.

JOHNSTON, L.D., O'MALLEY, P.M., BACHMAN, J.G. *National Trends in Drug Use and Related Factors Among American High School Students and Young Adults, 1975-1986.* U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHHS Publication No. (ADM) 87-1535, 1987.

KILLEN, J.D. Prevention of adolescent tobacco smoking: The social pressure resistance training approach. *Journal of Child Psychology and Psychiatry* 26(1):7-15, 1985.

KILLEN, J.D., MACCOBY, N., TAYLOR, C.B. Nicotine gum and self-regulation training in smoking relapse prevention. *Behavior Therapy* 15(3):234-248, 1984.

KING, A.C., FLORA, J.A., FORTMANN, S.P., TAYLOR, C.B. Smokers' challenge: Immediate and long-term findings of a community smoking cessation contest. *American Journal of Public Health* 77(10):1340-1341, October 1987.

KLESGES, R.C., VASEY, M.M., GLASGOW, R.E. A worksite smoking modification competition: Potential for public health impact. *American Journal of Public Health* 76(2):198-200, February 1986.

KOLBE, L.J., GILBERT, G.G. Involving the schools in the national strategy to improve the health of Americans. In: *Proceedings of Prospects for a Healthier America: Achieving the Nation's Health Promotion Objectives.* U.S. Department of Health and Human Services, Public Health Service, Office of Disease Prevention and Health Promotion, 1984, pp. 57-69.

KOLBE, L.J., IVERSON, D.C. Comprehensive school health education programs. In: Matarazzo, J.D., Weiss, S.M., Herd, J.A., Miller, N.E., Weiss, S.M. (eds.) *Behavioral Health: A Handbook of Health Enhancement and Disease Prevention.* New York: John Wiley and Sons, 1984, pp. 1094-1116.

KOTTKE, T.E., BATTISTA, R.N., DEFRIESE, G.H., BREKKE, M.L. Attributes of successful smoking cessation interventions in medical practice. A meta-analysis of 39 controlled trials. *Journal of the American Medical Association* 259:2883-2889, May 20, 1988.

KRASNEGOR, N.A. (ed.) *Cigarette Smoking as a Dependence Process,* NIDA Research Monograph 23. U.S. Department of Health, Education, and Welfare, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHEW Publication No. (ADM) 79-800, 1979a.

KRASNEGOR, N.A. (ed.) *The Behavioral Aspects of Smoking,* NIDA Research Monograph 26. U.S. Department of Health, Education, and Welfare, Public Health Service, Alcohol, Drug

Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHEW Publication No. (ADM) 79-882, 1979b.
LEVENTHAL, H., CLEARY, P.D. The smoking problem: A review of the research and theory in behavioral risk modification. *Psychological Bulletin* 88(2):370-405, 1980.
LICHTENSTEIN, E., BROWN, R.A. Smoking cessation methods: Review and recommendations. In: Miller, W.R. (ed.) *The Addictive Behaviors: Treatment of Alcoholism, Drug Abuse, Smoking, and Obesity*. Oxford: Pergamon Press, 1980.
LICHTENSTEIN, E., BROWN, R.A. Current trends in the modification of cigarette dependence. In: Bellach, A., Hersen, M., Kazdig, A.E. (eds.) *International Handbook of Behavior Modification*, Volume 2. New York: Plenum Press, 1983.
LICHTENSTEIN, E., DANAHER, B.G. Modification of smoking behavior: A critical analysis of theory, research, and practice. In: Hersen, M., Eisler, R., Miller, P.M. (eds.) *Progress in Behavioral Modification*, Volume 3. New York: Academic Press, 1976.
LICHTENSTEIN, E., GLASGOW, R.E., ABRAMS, D.B. Social support in smoking cessation: In search of effective interventions. *Behavior Therapy* 17:607-619, 1986.
LOHRMANN, D.K., GOLD, R.S., JUBB, W.H. School health education: A foundation for school health programs. *Journal of School Health* 57(10):420-425, December 1987.
LUEPKER, R.V., JOHNSON, C.A., MURRAY, D.M., PECHACEK, T.F. Prevention of cigarette smoking: Three-year follow-up of an education program for youth. *Journal of Behavioral Medicine* 6(1):53-62, 1983.
LUNDBERG, G.D. The AMA, policy follows science: A case history of tobacco. *Journal of the American Medical Assocation* 253(20):3001-3003, May 24-31, 1985.
LUNDBERG, G.D., KNOLL, E. Tobacco: For consenting adults in private only. *Journal of the American Medical Association* 255(8):1051-1053, February 1986.
MACHOVEC, F.J., MAN, S.C. Acupuncture and hypnosis compared: Fifty-eight cases. *American Journal of Clinical Hypnosis* 21(1):45-47, July 1978.
MARLATT, G.A., GORDON, J.R. *Relapse Prevention: Maintenance Strategies in the Treatment of Addictive Behaviors.* New York: Guilford Press, 1985.
MARSTON, A.R., BETTENCOURT, A. An evaluation of the American Lung Association's home video smoking cessation program. *American Journal of Public Health* 78(9):1226-1227, 1988.
MARTIN, G.P., WAITE, P.M.E. The efficacy of acupuncture as an aid to stopping smoking. *New Zealand Medical Journal* 93:421-423, June 24, 1981.
MARTIN, M.J., FEHRENBACH, A., ROSNER, R. Ban on smoking in industry. (Letter.) *New England Journal of Medicine* 315(10):647-648, September 4, 1986.
MCALISTER, A., GORDON, N.P. Attrition bias in a cohort study of substance abuse onset and prevention. *Evaluation Review* 10(6):853-859, December 1986.
MCALISTER, A.L., PERRY, C., KILLEN, J., SLINKARD, L.A., MACCOBY, N. Pilot study of smoking, alcohol and drug abuse prevention. *American Journal of Public Health* 70(7): 719-721, July 1980.
MCALISTER, A.L., PERRY, C., MACCOBY, N. Adolescent smoking: Onset and prevention. *Pediatrics* 63:650-658, 1979.
MCCAUL, K.D., GLASGOW, R.E. Preventing adolescent smoking: What have we learned about treatment construct validity? *Health Psychology* 4(4):361-387, 1985.
MCFARLAND, M.I. When five became twenty-five. A silver anniversary of the five-day plan to stop smoking. *Adventist Heritage* 11(1):57-64, 1986.
MERKI, D.J., CRESWELL, W.H., STONE, D.B., HUFFMAN, W., NEWMAN, I. The effects of two educational methods and message themes on rural youth smoking behavior. *Journal of School Health* 38:448-454, 1968.

MINNESOTA DEPARTMENT OF HEALTH. *The Minnesota Nonsmoking Initiative. June, 1985-December 1986. A Report to the 1987 Legislature*. Minnesota Department of Health, Center for Nonsmoking and Health, 1987.

MITCHELL, V. Instant answers for students on what smoking does to the body. *American Lung Association Bulletin* 64(8):6-9, October 1978.

MOSKOWITZ, J.M. Preventing adolescent substance abuse through drug education. In: Glynn, T.J., Leukefeld, C.G., Ludford, J.P. (eds.) *Preventing Adolescent Drug Abuse*, NIDA Research Monograph 47. U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHHS Publication No. (ADM) 85-1280, 1983, pp. 233-249.

MULTIPLE RISK FACTOR INTERVENTION TRIAL RESEARCH GROUP. Multiple Risk Factor Intervention Trial: Risk factor changes and mortality results. *Journal of the American Medical Association* 248(12):1465-1477, September 24, 1982.

MURRAY, D.M. Dissemination of community health promotion programs: The Fargo-Moorhead Heart Health Program. *Journal of School Health* 56(9):375-381, November 1986.

MURRAY, D.M., JOHNSON, C.A., LUEPKER, R.V., MITTELMARK, M.B. The prevention of cigarette smoking in children: A comparison of four strategies. *Journal of Applied Social Psychology* 14(3):274-288, 1984.

NATIONAL CANCER INSTITUTE. *Utilizing Physicians, Dentists, and Pharmacists as Health Exemplars to Help Smokers Quit--A Case Study*. National Cancer Institute, Office of Cancer Communications, April 1982.

NATIONAL CANCER INSTITUTE. *Smoking, Tobacco, and Cancer Program. Annual Report 1983*. U.S. Department of Health and Human Services, National Cancer Institute. NIH Publication No. 84-2687, September 1984.

NATIONAL CANCER INSTITUTE. *Smoking, Tobacco, and Cancer Program. 1985 Report*. National Cancer Institute, U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health. NIH Publication No. 86-2687, April 1986a.

NATIONAL CANCER INSTITUTE. Integrating tobacco education into the school system. Request for research grant applications: NIH-NCI-DCPC-HPSB-CA. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute, 1986b.

NATIONAL DIFFUSION NETWORK. *Final Report: Adoption Data* Hampton, New Hampshire: National Diffusion Network Technical Assistance, April 1988a.

NATIONAL DIFFUSION NETWORK. *Educational Programs That Work. A Collection of Proven Exemplary Educational Programs and Practices*, Fourteenth Edition. Longmont, Colorado: Sophis West, 1988b.

NATIONAL HEART, LUNG, AND BLOOD INSTITUTE. *Smoking Education Program Overview*. National Heart, Lung, and Blood Institute, Office of Prevention, Education, and Control, 1988.

NATIONAL HEART, LUNG, AND BLOOD INSTITUTE, NATIONAL INSTITUTES OF HEALTH. *Protocol for the Study of Early Intervention for Chronic Obstructive Pulmonary Disease*. National Heart, Lung, and Blood Institute, Division of Lung Diseases, 1986.

NATIONAL INSTITUTES OF HEALTH. Announcement. Prevention and cessation of use of smokeless tobacco. *NIH Guide for Grants and Contracts* 15(3):38-41, February 28, 1986.

NATIONAL INTERAGENCY COUNCIL ON SMOKING AND HEALTH. *Cookbook for a Smokeless Diet*. U.S. Department of Health, Education, and Welfare, Public Health Service, Centers for Disease Control, Bureau of Health Education, National Clearinghouse for Smoking and Health, 1977.

NATIONAL INTERAGENCY COUNCIL ON SMOKING AND HEALTH. *Final Report: Youth Leadership in Smoking Controls Program.* CDC 200-78-0815. National Interagency Council on Smoking and Health, September 30, 1979.

NATIONAL SCHOOL BOARDS ASSOCIATION. *No Smoking: A Board Member's Guide to Nonsmoking Policies for the Schools.* Alexandria, Virginia: National School Boards Association, June 1987.

NEWSWEEK. The kick-the-habit business: Corporations pay big money to help smokers quit. *Newsweek,* August 29, 1988, pp. 42-43.

NUEHRING, E., MARKLE, G.E. Nicotine and norms: The re-emergence of a deviant behavior. *Social Problems* 21:513-526, 1974.

O'ROURKE, T., NOLTE, A.E., SMITH, B.J. Improving anti-smoking education: Profiling the ex-smoker. *Journal of Drug Education* 15(1):7-22, 1985.

OCKENE, J.K. Physician-delivered interventions for smoking cessation: Strategies for increasing effectiveness. *Preventive Medicine* 16:723-737, 1987.

OCKENE, J.K., HOSMER, D.W., WILLIAMS, J.W., GOLDBERG, R.J., OCKENE, I.S., BILIOURIS, T., DALEN, J.E. The relationship of patient characteristics to physician delivered smoking cessation advice. *Journal of General Internal Medicine* 2:337-340, 1987.

OCKENE, J.K., HYMOWITZ, N., SEXTON, M., BROSTE, S.K. Comparison of patterns of smoking behavior change among smokers in the Multiple Risk Factor Intervention Trial (MRFIT). *Preventive Medicine* 11:621-638, 1982.

OCKENE, J.K., QUIRK, M.E., GOLDBERG, R.J., KRISTELLER, J.L., DONNELLY, G., KALAN, K.L., GOULD, B., GREENE, H.L., HARRISON-ATLAS, R., PREASE, J., PICKENS, S., WILLIAMS, J.W. A residents' training program for the development of smoking intervention skills. *Archives of Internal Medicine* 148:1039-1045, May 1988.

OEI, T.P.S., FEA, A. Smoking prevention program for children: A review. *Journal of Drug Education* 17(1):11-42, 1987.

OMENN, G.S., THOMPSON, B., SEXTON, M., HESSOL, N., BREITENSTEIN, B., CURRY, S., MICHNICH, M., PETERSEN, A. A randomized comparison of worksite-sponsored smoking cessation programs. *American Journal of Preventive Medicine* 4(5):261-267, 1988.

ORLANDI, M.A. The diffusion and adoption of worksite health promotion innovations: An analysis of barriers. *Preventive Medicine* 15:522-536, 1986.

ORLEANS, C.S., SHIPLEY, R.H. Worksite smoking cessation initiatives: Review and recommendations. *Addictive Behaviors* 7:1-16, 1982.

PARKER, S., WARNER, K.E. Smoking policies in the workplace: Research needs and potential applications. *New York State Journal of Medicine 89(1):2-4,* January 1989.

PATTERSON, J.T. *The Dread Disease. Cancer and Modern American Culture.* Cambridge, Massachusetts: Harvard University Press, 1987.

PECHACEK, T. A randomized community trial for smoking cessation. In: Aoki, M., Hisamichi, S., Tominaga, S. (eds.) *Smoking and Health, 1987.* Proceedings of the 6th World Conference on Smoking and Health, Tokyo, November 9-12, 1987. Amsterdam: Excerpta Medica, 1988. pp. 241-243.

PECHACEK, T.F. Modification of smoking behavior. In: Krasnegor, N.A. (ed.) *The Behavioral Aspects of Smoking,* NIDA Research Monograph 26. U.S. Department of Health, Education, and Welfare, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse. DHEW Publication No. 79-882, August 1979, pp. 127-188.

PERRY, C.L., KILLEN, J., SLINKARD, L.A., MCALISTER, A.L. Peer teaching and smoking prevention among junior high students. *Adolescence* 15(58):277-281, 1980.

PERRY, C.L., KILLEN, J., TELCH, M., SLINKARD, L.A., DANAHER, B.G. Modifying smoking behavior of teenagers: A school-based intervention. *American Journal of Public Health* 70(7):722-725, 1980.

PERRY, C.L., MURRAY, D.M. Enhancing the transition years: The challenge of adolescent health promotion. *The Journal of School Health* 52(5):307-311, 1982.

PERRY, C.L., TELCH, M.J., KILLEN, J., BURKE, A., MACCOBY, N. High school smoking prevention: The relative efficacy of varied treatments and instructors. *Adolescence* 18(71): 561-566, 1983.

PERTSCHUK, M. *Giant Killers. New* York: Norton, 1986.

PIGG, R.M. JR., BAILEY, W.J., SEFFRIN, J.R., TORABI, M.R., LAVE, J.S. Evaluation of American Cancer Society elementary school public education programs. *Journal of School Health* 55(4):157-160, 1985.

PIRIE, P.L., MURRAY, D.M., LUEPKER, R.V. Smoking prevalence in a cohort of adolescents, including absentees, dropouts, and transfers. *American Journal of Public Health* 78(2):176-178, 1988.

POLICH, J.M., ELLICKSON, P.L., REUTER, P., KAHAN, J.P. *Strategies for Controlling Adolescent Drug* Use. Santa Monica, California: Rand Corporation, 1984.

POWELL, D.R., MCCANN, B.S. The effects of a multiple treatment program and maintenance procedures on smoking cessation. *Preventive Medicine* 10:94-104, 1981.

PROCHASKA, J.O., DICLEMENTE, C.C. Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology* 51(3): 390-395, 1983.

PUSKA, P., BJORKQVIST, S., KOSKELA, K. Nicotine-containing chewing gum in smoking cessation: A double blind trial with half year follow-up. *Addictive Behaviors* 4:141-146, 1979.

RAMIREZ, A.G., MCALISTER, A.L. Mass media campaign--A Su Salad. *Preventive Medicine* 17(5):608-621, September 1988.

REIF, A.E. Public information on smoking. An urgent responsibility for cancer research workers. *Journal of the National Cancer Institute* 57(6):1207-1210, December 1976.

ROPER. *A Study of Public Attitudes Toward Cigarette Smoking and the Tobacco Industry in 1978*, Volume 1. Roper Organization, May 1978.

ROSEN, G.M., LICHTENSTEIN, E. An employee incentive program to reduce cigarette smoking. *Journal of Consulting and Clinical Psychology* 45(5):957, 1977.

ROSENBERG, J. The AMA tackles smoking: "A Strong Stand." *New York State Journal of Medicine* 83(13):1363-1365, December 1983.

RUSSELL, M.A.H., MERRIMAN, R., STAPLETON, J., TAYLOR, W. Effect of nicotine gum as an adjunct to general practitioners' advice against smoking. *British Medical Journal* 287(6407):1782-1785, December 10, 1983.

RUSSELL, M.A.H., WILSON, C., TAYLOR, C., BAKER, C.D. Effect of general practitioners' advice against smoking. *British Medical Journal* 2(6184):231-235, July 28, 1979.

ST. PIERRE, R.W., SHUTE, R.E., JAYCOX, S. Youth helping youth: A behavioral approach to the self-control of smoking. *Health Education* 14(1):28-31, January-February 1983.

SCHINKE, S.P., GILCHRIST, L.D., SNOW, W.H., SCHILLING, R.F. Skills-building methods to prevent smoking by adolescents. *Journal of Adolescent Health Care* 6:439-444, 1985.

SCHNEIDEMAN, I. Acupuncture and smoking. (Letter.) *New Zealand Medical Journal* 94(693):276, October 14, 1981.

SCHNEIDER, N.G., JARVIK, M.E., FORSYTHE, A.B. Nicotine vs. placebo gum in the alleviation of withdrawal during smoking cessation. *Addictive Behaviors* 9(2):149-156, 1984.

SCHNEIDER, N.G., JARVIK, M.E., FORSYTHE, A.B., READ, L.L., ELLIOTT, M.L., SCHWEIGER, A. Nicotine gum in smoking cessation: A placebo-controlled, double-blind trial. *Addictive Behaviors* 8(3):253-261, 1983.

SCHWARTZ, J.L. A critical review and evaluation of smoking control methods. *Public Health Reports* 84(6):483-506, June 1969.

SCHWARTZ, J.L. *Review and Evaluation of Smoking Cessation Methods: United States and Canada, 1978-1985*. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health. NIH Publication No. 87-2940, April 1987.

SCHWARTZ, J.L., RIDER, G. *Review and Evaluation of Smoking Control Methods: The United States and Canada, 1969-1977*. U.S. Department of Health, Education, and Welfare, Public Health Service, Center for Disease Control, Bureau of Health Education. HEW Publication No. (CDC) 79-8369, 1978.

SEFFRIN, J.R., BAILEY, W.J. Approaches to adolescent smoking cessation and education. *Special Services in the Schools* 1(3):25-38, 1985.

SEVERSON, H., JAMES, L.E., LACHANCE, P.-A., EAKIN, E. *Up to Snuff. A Handbook on Smokeless Tobacco*. Eugene, Oregon: Independent Video Services, 1987.

SHAFFER, H., BECK, J.C., BOOTHROYD, P. The primary prevention of smoking onset: An inoculation approach. *Journal of Psychoactive Drugs* 15(3):177-184, July-September 1983.

SHIPLEY, R.H., ORLEANS, C.T., WILBUR, C.S., PISERCHIA, P.V., MCFADDEN, D.W. Effect of the Johnson and Johnson LIVE FOR LIFE Program on employee smoking. *Preventive Medicine* 17(1):25-34, January 1988.

SKINNER, W.F., MASSEY, J.L., KROHN, M.D., LAUER, R.M. Social influences and constraints on the initiation and cessation of adolescent tobacco use. *Journal of Behavioral Medicine* 8(4):353-376, December 1985.

SLADE, J.D. A disease model of cigarette use. *New York State Journal of Medicine 85(7):294-*297, July 1985.

SMITH, J.W. Long term outcome of clients treated in a commercial stop smoking program. *Journal of Substance Abuse Treatment* 5:33-36, 1988.

SMITH, L. The D-Day story. In: Steinfeld, J., Griffiths, W., Ball, K., Taylor, R.M. (eds.) *Smoking and Health. II. Health Consequences, Education, Cessation Activities, and Governmental Action*. Proceedings of the 3rd World Conference on Smoking and Health. U.S. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, National Cancer Institute. DHEW Publication No. (NIH) 77-1413, 1977, pp. 409-413.

SNOW, W.H., GILCHRIST, L.D., SCHINKE, S.P. A critique of progress in adolescent smoking prevention. *Children and Youth Services Review* 7:1-19, 1985.

SOFFER, A. Smoking, the new ACCP fellowship pledge, and preventive medicine. *Chest* 77(4):459-460, April 1980.

SOFFER, A. Introduction. *Chest* 93(2, Supplement):33S, February 1988.

SOLBERG, L.I. Implementing a tobacco cessation program in clinical practice. *Medical Times* 116(4):119-124, April 1988.

SPIEGEL, H. A single-treatment method to stop smoking using ancillary self-hypnosis. *International Journal of Clinical and Experimental Hypnosis* 18(4):235-250, 1970.

STONE, E.J. School-based health research funded by the National Heart, Lung, and Blood Institute. *Journal of School Health* 55(5):168-174, May 1985.

SUSSMAN, S., BRANNON, B.R., FLAY, B.R., GLEASON, L., SENOR, S., SOBOL, D.F., HANSEN, W.B., JOHNSON, C.A. The television, school and family smoking prevention/cessation project. II. Formative evaluation of television segments by teenagers and parents--Implications for parental involvement in drug education. *Health Education Research* 1(3):185-194, 1986.

SUSSMAN, S., DENT, C.W., FLAY, B.R., HANSEN, W.B., JOHNSON, C.A. Psychosocial predictors of cigarette smoking onset by white, black, Hispanic, and Asian adolescents in southern California. *Morbidity and Mortality Weekly Report* 36(4S):11S-16S September 4, 1987.

TAYLOR, P. *The Smoke Ring. Tobacco, Money, and Multinational Politics.* New York: Pantheon Books, 1984.

TELCH, M.J., KILLEN, J.D., MCALISTER, A.L., PERRY, C.L., MACCOBY, N. Long-term follow-up of a pilot project on smoking prevention with adolescents. *Journal of Behavioral Medicine* 5(l):l-8, 1982.

THOMPSON, E.L. Smoking education programs 1960-1976. *American Journal of Public Health* 68(3):250-257, March 1978.

TONNESEN, P., HANSEN, M., HELSTED, J., GUNNERSEN, A.B., FORCHAMMER, H., STOCKNER, M. Effect of nicotine chewing gum in combination with group counseling on the cessation of smoking. *New England Journal of Medicine* 318(1):15-18, 1988.

TROYER, R.J., MARKEL, G.E. *Cigarettes, the Battle Over Smoking.* New Brunswick, New Jersey: Rutgers University Press, 1983.

U.S. DEPARTMENT OF DEFENSE. *Report on Smoking and Health in the Military.* U.S. Department of Defense, Office of the Assistant Secretary of Defense (Health Affairs), Office of the Assistant Secretary of Defense (Force Management and Personnel), March 1986.

U.S. DEPARTMENT OF DEFENSE. *Updated Report on Smoking and Health in the Military.* U.S. Department of Defense, Office of the Assistant Secretary of Defense (Health Affairs), Office of the Assistant Secretary of Defense (Force Management and Personnel), June 1987.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *Smoking Programs for Youth.* U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute. NIH Publication No. 80-2156, June 1980a.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The Health Consequences of Smoking for Women. A Report of the Surgeon General.* U.S. Department of Health and Human Services, Public Health Service, Office of the Assistant Secretary for Health, Office on Smoking and Health, 1980b.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The Health Consequences of Smoking. The Changing Cigarette: A Report of the Surgeon General.* U.S. Department of Health and Human Services, Public Health Service, Office of the Assistant Secretary for Health, Office on Smoking and Health. DHHS Publication No. (PHS) 81-50156, 1981.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The Health Consequences of Smoking: Cancer. A Report of the Surgeon General.* U.S. Department of Health and Human Services, Public Health Service, Office on Smoking and Health. DHHS Publication No. (PHS) 82-50179, 1982.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The Health Consequences of Smoking: Cardiovascular Disease. A Report of the Surgeon General.* U.S. Department of Health and Human Services, Public Health Service, Office on Smoking and Health. DHHS Publication No. (PHS) 84-50204, 1983a.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The Physician's Guide. How to Help Your Hypertensive Patients Stop Smoking.* U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health. DHHS Publication No. (NIH) 83-1271, April 1983b.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The Health Consequences of Smoking: Chronic Obstructive Lung Disease. A Report of the Surgeon General.* U.S. Department of Health and Human Services, Public Health Service, Office on Smoking and Health. DHHS Publication No. (PHS) 84-50205, 1984.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The Health Consequences of Smoking: Cancer and Chronic Lung Disease in the Workplace. A Report of the Surgeon General.* U.S. Department of Health and Human Services, Public Health Service, Office on Smoking and Health. DHHS Publication No. (PHS) 85-50207, 1985a.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *A Decision Maker's Guide to Reducing Smoking at the Worksite.* U.S. Department of Health and Human Services, Public Health Service, Office on Smoking and Health, Office of Disease Prevention and Health Promotion, 1985b.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *Smoking and Health. A National Status Report. A Report to Congress.* U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Health Promotion and Education, Office on Smoking and Health. DHHS Publication No. (CDC) 87-8396, 1986a.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The Health Consequences of Involuntary Smoking. A Report of the Surgeon General.* U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control. DHHS Publication No. (CDC) 87-8398, 1986b.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The Health Consequences of Using Smokeless Tobacco. A Report of the Advisory Committee to the Surgeon General.* U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health. NIH Publication No. 86-2874, 1986c.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *State and Local Programs on Smoking and Health.* U.S. Department of Health and Human Services, Public Health Service, Office of the Assistant Secretary for Health, Office on Smoking and Health. DHHS Publication No. (PHS) 86-50190, 1986d.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *Clinical Opportunities for Smoking Intervention. A Guide for the Busy Physician.* U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health. NIH Publication No. 86-2178, August 1986e.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *National Survey of Worksite Health Promotion Activities: A Summary*. U.S. Department of Health and Human Services, Public Health Service, Office of Disease Prevention and Health Promotion. Monograph series, Summer 1987.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The Health Consequences of Smoking: Nicotine Addiction. A Report of the Surgeon General*, 1988. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Health Promotion and Education, Office on Smoking and Health. DHHS Publication No. (CDC) 88-8406, 1988.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES. *The 1987 National Adolescent Student Health Survey*. U.S. Department of Health and Human Services, Public Health Service, Office of Disease Prevention and Health Promotion, in press.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE. *The Health Consequences of Smoking. A Report of the Surgeon General: 1972.* U.S. Department of Health, Education, and Welfare, Public Health Service, Health Services and Mental Health Administration. DHEW Publication No. (HSM) 72-7516, 1972.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE. *San Diego Smoking Research Project. Five Year* Status. U.S. Department of Health, Education, and Welfare, Center for Disease Control. DHEW Project No. 200-75-0516:1-7, 1976.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE. *The Health Consequences of Smoking, 1977-1978.* U.S. Department of Health, Education, and Welfare, Public

Health Service, Officie of the Assistant Secretary for Health, Office on Smoking and Health. DHEW Publication No. (PHS) 79-50065, 1978.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE. *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention.* U.S. Department of Health, Education, and Welfare, Public Health Service, Office of the Assistant Secretary for Health and Surgeon General. DHEW Publication No. (PHS) 79-55071, 1979a.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE. *Smoking and Health. A Report of the Surgeon General.* U.S. Department of Health, Education, and Welfare, Public Health Service, Office of the Assistant Secretary for Health, Office on Smoking and Health. DHEW Publication No. (PHS) 79-50066, 1979b.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE. *Teenage Smoking. Immediate and Long-Term Patterns.* U.S. Department of Health, Education, and Welfare, National Institute of Education, November 1979c.

U.S. PREVENTIVE SERVICES TASK FORCE. Recommendations for smoking cessation counseling. *Journal of the American Medical Association* 259(19):2882, May 20, 1988.

U.S. PUBLIC HEALTH SERVICE. *Smoking and Health. Report of the Advisory Committee to the Surgeon General of the Public Health Service.* U.S. Department of Health, Education, and Welfare, Public Health Service, Center for Disease Control. PHS Publication No. 1103, 1964.

UNIVERSITY OF THE STATE OF NEW YORK. *Annotated Resource Guide for Alcohol, Tobacco and Other Drug Abuse/Misuse Prevention Education Programs. Secondary Level.* Albany, New York: University of the State of New York, State Education Department, Bureau of Drug Education, 1979.

WALTER, H.J., VAUGHAN, R.D., WYNDER, E.L. Primary prevention of cancer among children: Changes in cigarette smoking and diet after six years of intervention. *Journal of the National Cancer Institute,* in press.

WARNER, K.E. The effects of the anti-smoking campaign on cigarette consumption. *American Journal of Public Health* 67(7):645-650, July 1977.

WARNER, K.E. Possible increases in the underreporting of cigarette consumption. *Journal of the American Statistical Association* 73(362):314-318, June 1978.

WARNER, K.E. Cigarette smoking in the 1970's: The impact of the antismoking campaign. *Science* 211(4483):729-731, February 13, 1981.

WARNER, K.E. *Selling Smoke: Cigarette Advertising and Public Health.* Washington, DC.: American Public Health Association, October 1986.

WARNER, K.E., ERNSTER, V.L., HOLBROOK, J.H., LEWIT, E.M., PERTSCHUK, M., STEINFELD, J.L., WHELAN, E.M. Public policy on smoking and health: Toward a smoke-free generation by the year 2000. A statement of a working group to the Subcommittee on Smoking of the American Heart Association. *Circulation* 73(2):381A-395A. February 1986.

WARNER, K.E., MURT, H.A. Impact of the antismoking campaign on smoking prevalence: A cohort analysis. *Journal of Public Health Policy* 3(4):374-390, December 1982.

WEISSMAN, W., GLASGOW, R., BIGLAN, A., LICHTENSTEIN, E. Development and preliminary evaluation of a cessation program for adolescent smokers. *Psychology of Addictive Behaviors* 1(2):84-91, 1987.

WHELAN, E.M. *A Smoking Gun: How the Tobacco Industry Gets Away With Murder.* Philadelphia: George F. Stickley, 1984.

WILBUR, C.S. The Johnson and Johnson Program. *Preventive Medicine* 12:672-681, 1983.

WILSON, D.M., TAYLOR, W., GILBERT,J.R., BEST, J.A., LINDSAY, E.A., WILLMS, D.G., SINGER, J. A randomized trial of a family physician intervention for smoking cessation. *Journal of the American Medical Association* 260(11):1570-1574, September 16, 1988.

WONG, W. Smoke-free rooms really will decide this California vote. Tobacco firms pour in money to fight proposal to ban indoor public puffing. *Wall Street Journal*, October 25, 1978, pp. 1, 23.

WORDEN, J.K., FLYNN, B.S., BRISSON, S.F., SECKER-WALKER, R.H., MCAULIFFE, T.L., JONES, R.P. An adult communication skills program to prevent adolescent smoking. *Journal of Drug Education* 17(l):1-9, 1987.

WORDEN, J.K., FLYNN, B.S., GELLER, B.A., CHEN, M., SHELTON, L.G., SECKER-WALKER, R.H., SOLOMON, D.S., SOLOMON, L.J.,COUCHEY, S.,CONSTANZA, M.C. Development of a smoking prevention mass media program using diagnostic and formative research. *Preventive Medicine*, in press.

YOUNG.S.R.. CHEN, T.T.L., CERNADA, G.P. An evaluation of a biofeedback smoking education program. *International Quarterly of Community Health Education* 2(4):329-337, 1981-1982.